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ABSTRACT

This guide is designed as a resource for individuals and groups who are considering why and how to implement teaching about nuclear issues in the classroom. Section I presents some questions frequently asked about nuclear education and responses based upon the experience and research of Educators for Social Responsibility. Section II highlights recent studies concerned with the effects of the nuclear threat on young people. Section III contains reprints of essays and articles dealing with the rationale for nuclear education and ways of implementing it. Section IV presents resolutions passed by national organizations, school districts, and prominent individual educators in support of nuclear education. Section V reviews curricula and classroom materials useful for implementing teaching about nuclear issues. (IS)

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WHY NUCLEAR EDUCATION?

* Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

Nuclear education

Milwaukee — Margene Worin's 7-year-old son began creating scenes depicting people being rescued after he started out on a mission.

"We are trying to take a
...," said Rose.

Charlotte Keys

A timely and controversial

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

Parents face some tough questions

By Nancy J. Statin
of The Journal News

"Mommy, if there's a nuclear war, will I hurt a lot?" If your child approached you with any other question about nuclear war, would you respond?

Jacqueline Hensley, director of Milwaukee Peace Education Center and herself a mother, regularly clipped and pasted peace efforts from newspapers and magazines to show her children the importance of peace.

"I don't think I ever told them it was important," she said, "NOT going to let my kids see anything like that."

"I think it's more valuable to have them know what has happened since World War II."

Nuclear fears: Too

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Nuclear fears: Too

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Nuclear fears: Too big a burden for our children?

A SOURCEBOOK FOR EDUCATORS AND PARENTS

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Educators for Social Responsibility

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WHY NUCLEAR EDUCATION?
A SOURCEBOOK FOR EDUCATORS AND PARENTS

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A SOURCEBOOK FOR EDUCATORS AND PARENTS

by Susan Alexander

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WHY NUCLEAR EDUCATION? A Sourcebook for Educators and Parents

INTRODUCTION

What is education for living in the nuclear age? Does the nuclear age require us to include new purposes in our teaching? Why is it imperative that students become nuclear literate?

This Sourcebook has grown out of the plethora of inquiries we have received at the National Office of Educators for Social Responsibility. Increasingly, educators and others who work closely with young people are requesting information about the rationale, methodology and materials for nuclear age education in schools.

We envision this Guide as a valuable resource for both individuals and groups (PTAs, school administrators, professional associations, and those approaching school boards) who are considering implementing teaching about nuclear issues in the classroom.

Section I of this handbook presents some questions frequently asked about nuclear education and responses based upon the experience and research of Educators for Social Responsibility in classrooms around the country. The initial questions people tend to ask often have to do with informational content and available materials. However, with increasing experience leaders in nuclear education have come to believe that what is taught -- the topics covered and the materials used -- may be less significant than the teaching process itself -- that is, the teaching styles and methods through which teachers approach the content and material.¹

In Section II we highlight recent studies concerned with the effects on young people of the nuclear threat. This topic continues to be prominent in adult thinking about and action toward nuclear age education.

Research is incomplete about the degree our children's health -- emotional, psychological, mental, spiritual -- is being affected by the nuclear arms race and the concomitant possibility of the annihilation of life. However, according to a recent survey conducted by the National Association of Secondary School Principals,²

"the percentage of today's students who are very concerned about the possibility of global confrontation [is] almost 50 percent...These student views on world problems were remarkably consistent, regardless of the students' ages, geographic region, and family income levels...Given this uncharacteristically high degree of uniformity in the students' responses about world problems -- most notably, nuclear disaster and war -- it appears that young people today very strongly believe and fear that some type of global violence is a real possibility within their lifetimes."

For these reasons, ESR believes that we cannot wait to begin responding to young people's concerns. While further study of youth's concerns about the future is necessary, there is a growing consensus that the needs of young people in the nuclear age do require serious attention.

Section III of the Sourcebook contains reprints of some essays and articles that we consider seminal for nuclear education. Each discusses in greater depth rationales and methodologies for infusing a study of nuclear realities into students' education at all levels -- elementary through adult.

Section IV of the Sourcebook presents resolutions passed by national organizations, school districts and prominent individual educators in support of teaching nuclear issues in schools. The number of such statements from professional groups has increased dramatically in recent months.

Resources, Section V, provides a review of curricula and similar specialized classroom materials. While dozens of outstanding books and articles on the nuclear arms race and related issues are available for background reading and teacher preparation, we have decided to focus in this Sourcebook only on those that have direct application to classrooms. In this way, we will be trying to utilize our special expertise as classroom educators to illuminate the processes of nuclear age education, while pointing, in our Resources section, to materials that also feature content expertise.

This Sourcebook is intended to broaden both the dialogue about and the vision of new approaches to teaching in the nuclear age. While the impetus for its writing emerged from increasing requests for such assistance at the national office of ESR, its true source is the Board of Directors of ESR and other active ESR members. The ideas in this book represent a synthesis and refinement of the best thinking of ESR members around the country, who have contributed innumerable voluntary hours helping to shape ESR's philosophy and programs. To the ESR Board I wish to give special thanks.

Refining the field of nuclear education is a continuous process. We consider this publication but an attempt to make an initial statement of some of the results of ESR's trials and errors. Comments and feedback from both ESR members and non-members are not only welcome but desired. Please let us know in what ways you found this book useful and how we can improve it.

Susan Alexander

SECTION I

WHY

NUCLEAR

EDUCATION?



SOME COMMONLY ASKED QUESTIONS ABOUT NUCLEAR AGE EDUCATION

1. WHY DO WE NEED NUCLEAR EDUCATION IN SCHOOLS? WHAT IS ITS PURPOSE?

A. Educating for Democracy: Enlarging the Center⁴

Increasingly, positions about the nuclear threat and arms race are hardening, polarizing the debate about the purposes of nuclear weapons, particularly among "the experts." The need for education about nuclear issues in schools nationwide, at all levels, is based upon the need in a democracy not for more experts but for the creation of a more informed citizenry. The primary goal of nuclear education is to "enlarge the center" of informed and active citizens capable of both dialogue and commitment. The debate itself over nuclear weapons needs to be brought further into the public domain, and a wider range of knowledgeable citizens needs to contribute to it.

The Public Agenda Foundation's recent briefing book Voter Options on Nuclear Arms Policy⁵ reports that "If there was ever an issue [the dangers of a nuclear arms race] which called for democracy at its best, it is this..."⁶ One of the salient areas of the nuclear debate documented in this report is the extent to which the public is "misguided" in its knowledge. The report concludes that "two courses of action are open to us as a society...One is to exclude the public; the other is to include them more. Exclusion is no longer practical. The public has involved itself -- has in fact been 'invited in' increasingly by a concerned leadership."⁷

B. Addressing Student Needs

Both in the U. S. and in other countries, studies about the effects of the nuclear threat on young people indicate that students have already become profoundly aware of and concerned about the implications of nuclear issues and the consequences of nuclear war.⁸ (See enclosed reprint, "Children and Nuclear War", in Section II.) Apparently, the media is the primary vehicle through which young people have gained much of this awareness.

Many young people believe that nuclear war is inevitable and that they will not survive. In fact, the Public Agenda survey found that half of all people under 30 in the U.S. believe that "all-out nuclear war is likely to occur within the next 10 years."⁹ Young people feel helpless about a world they view as out of control and without choices.¹⁰

Why Nuclear Education?/2

They feel pervasive despair about the future of their nation and world.¹¹ Nuclear education can contribute to overcoming the feeling of the inevitability of nuclear war.

This lack of hope for the future may directly affect student motivation for school work. In the face of the nuclear threat many young people already feel reluctance to work hard in preparation for the future. The issue, therefore, is not whether or not nuclear education will frighten young people. Rather, it is how adults who work closely with them will fulfill their responsibility to respond to the concerns youth already have.

C. Educating for Excellence

ESR's suggestions about teaching processes for nuclear age education are grounded in principles basic to all good education. The best education increases the ability of students to think for themselves in systematic and disciplined ways. The signal importance of **critical thinking** is underscored in a study¹² that revealed a 10-year decline in reasoning and problem-solving skills among this nation's students. The most disturbing conclusion of this report was that "hardly any of the students...showed evidence of having and using a systematic approach to...analytic tasks."¹³

Some education critics believe that this decline in analytical skills results from the inadequacy of traditional instructional methods in our schools: presenting information to passive listeners and asking questions primarily for factual recall. Indeed, current research states that 80 to 85 percent of all questions asked by teachers are on a factual level.¹⁴ In other words, information alone does not necessarily lead students to "become active questioners and to approach problems in an analytic and systematic way."¹⁵ In recent education reports several prominent educational researchers (Ernest Boyer and John Goodlad, e.g.) criticize the more passive instructional approaches prevalent in schools today.

Critical thinking and active inquiry are essential for the challenges of both educating for excellence and for the nuclear age.

2. WHAT DOES NUCLEAR EDUCATION CONSIST OF?

A. **New Information.** On its most obvious level nuclear education includes such topics as the study of nuclear weapons, their short and long-term consequences, deterrence theory, arms control and national security, proliferation and the history of the arms race. Standard textbooks typically devote only a paragraph or two to atomic weaponry and end, rather than begin their discussion at Hiroshima.

The subject matter of nuclear education may also, depending upon grade level, include the study of war, peace and conflict resolution; violence and nonviolence; the skills of cooperation, negotiation and mediation; activities that teach belief in the power of ordinary individuals in a democracy to make a difference; and the fostering of the development in students of critical thinking skills.

B. Critical Thinking and Active Inquiry

In developing critical thinking skills ESR's pedagogy places primary emphasis on dialogue and active listening. Often attracted to simple answers and ideology, young people require teaching materials, discussions and approaches, especially with regard to complex issues, that "complicate" their thinking.

A primary means of avoiding simplistic thinking is use of inquiry teaching strategies. Active inquiry can be promoted through broadening instructional methods so that students are encouraged to become actively involved in dialogue with both their teachers and peers. Another means of complicating students' thinking is to emphasize a balance of viewpoints. A balanced presentation of multiple perspectives encourages students to grapple with complexity and ambiguity, contradiction and paradox, and the uncertainty resulting from the conflicting testimony of "experts."

Teaching for critical thinking takes great skill, however. The difficulty resides not so much in the preparation of balanced materials as in the implementation of a balanced approach in the classroom.¹⁷ It is possible, for instance, to teach many sides of an issue and still not teach for critical thinking. The ability to reason more logically may not necessarily follow from the presentation of different sides of issues.

ESR's approach to nuclear age education, therefore, involves not only encouraging students to listen to multi-perspectives on an issue, but to listen in a new way. Since critical thinking begins with teachers themselves, in ESR professional development workshops teachers also work toward hearing divergent views differently. In the traditional approach to hearing other sides of an issue -- the debate -- we often concentrate on what points in positions opposing our own we may be able to attack. This approach, however, does not allow our own thinking to be enlarged by valid aspects of a divergent opinion. Truly to enlarge thinking requires the suspension of judgment when hearing diverse viewpoints sufficient to seek what is right, rather than what is wrong, with the argument; in short, dialogue.¹⁸

Dialogue encourages collaboration and negotiation, skills essential for the solution of conflict in the nuclear age. Debate tends to polarize and create an adversarial stance. The magnitude and complexity of the nuclear dilemma may require the best efforts of many minds for resolution; we cannot afford to shut out any possible contribution.

C. Citizen Education

The functioning of a democracy requires a knowledgeable citizenry willing to accept the responsibility of participating in the political process. The healthy development of young people requires a belief in empowerment and hope in the future. Some recent studies and ESR's first-hand classroom experiences suggest, however, that many young people today lack belief in the efficacy of individual action on public policy. This alienation and cynicism threaten one of the major ideals of American democracy.

Nuclear age education addresses this problem. Several major teaching strategies provide avenues for this process. First, it is vital to establish a context for allowing discussion of such fears. Many of ESR's experiences with students, regardless of grade level, reveal that the nurturing of faith in the future and in the capacity of individuals to make a difference requires that teaching processes first acknowledge, legitimize and validate the fears of youth about the future and their sense of powerlessness. An integral part of this apprehension stems from fears about survival, both personal and planetary, that have been engendered by awareness of the threat to all life and by the possibility of a break in the human evolutionary chain.

Second, we can use classroom materials in a way that promotes an understanding of the importance of choice, of the power of the electorate and of the ability to make a difference through the democratic process. We can provide opportunities for students to experience empowerment in their own lives. The purpose of emphasizing active learning and a belief in empowerment in this way is to impart to students a positive attitude and confidence sufficient to challenge them to become involved in public issues, rather than leaving these issues to the "experts."

In this way, nuclear education, without expecting young people to influence policy in the nuclear arena, increases students' understanding of the responsibility of citizens in a democracy. For these reasons, empowerment and hope are cornerstones of both ESR's teaching materials and process. "Perhaps education in the nuclear age, at its highest, most conscientious level, is education that prepares people to create democracy." 19

3. ARE BALANCED MATERIALS AND RESOURCES ON NUCLEAR ISSUES CURRENTLY AVAILABLE? HOW DO WE DEAL WITH BIAS IN MATERIALS?

In the past year and a half the dimensions of the nuclear arms race have been greatly clarified by the publication of literally hundreds of books and resources. Not all of these materials, however, may be appropriate for use in the classroom.

Some critics maintain that materials available for classroom use are produced only by advocates of particular viewpoints and, therefore, always reflect bias. The premise of this reservation is that materials related to the nuclear arms race should be objective. However, ESR has found that balance, rather than objectivity, is a more realistic goal. Even when a scrupulous attempt is made to be even-handed, a point of view always exists and a set of values always informs a discussion. Decisions about what to include and what to omit, for example, as well as the amount of space devoted to a view, inevitably betray a viewpoint.

With this in mind, ESR attempts actively to use bias, by teaching from it, rather than trying to avoid it completely. In this view, materials from many different sources are presented, e.g. a State Department or Pentagon document, a Presidential address, a Nuclear Freeze position paper. In this way, students' thinking skills -- looking at assumptions, premises, hypotheses, inferences, for instance -- are developed through exposure to each bias and to an entire range of viewpoints.

4. HOW IS NUCLEAR EDUCATION ADDRESSED AT DIFFERENT GRADE LEVELS?

A. What content, material and methods are appropriate in the elementary grades?

Complete information about nuclear weapons and war is not appropriate for all age and grade levels. In the elementary school, for example, it is usually recommended that teacher-initiated information on the effects of nuclear weapons be avoided. Nuclear education at the elementary level may be seen quite differently from that at upper levels.

What elementary age children need first is a safe environment in which to acknowledge their fears. Adults can reassure them that they understand the children's concerns and are aware of the magnitude of the nuclear threat.

If elementary school students indirectly illustrate feelings about nuclear weapons in their play, stories or drawing, teachers have found that often they are not asking for a clarification of the nuclear vocabulary, but rather for an opportunity to express their feelings and be reassured. While the importance of play is paramount, blurring of fantasy and reality occurs often.

Concerns at this age tend to be personal, concrete, and present-oriented, revolving around home, family, personal safety, the death of a pet, illness, divorce, violence in play and the like. Views of the world often do not include a concept of the future. At this level students also shape their world both by dichotomy (good/bad, win/lose, us/them) and by simplification. Elementary teachers have found it best, therefore, if activities and discussion revolve around personal aspects

of conflict resolution and peace, intercultural understanding, the concept of the enemy, perhaps the roots of prejudice and related topics. In the family, in the classroom, and on the playground, these students can practice cooperation and negotiation skills and examine nonviolent ways of resolving conflict.

Elementary school is not too early for students to begin to experience another key aspect of nuclear age education: understanding the empowerment of individuals. While appropriate outlets for action in the nuclear arena are impossible at this age, elementary students can be helped to identify concrete and appropriate areas in their personal environment in which action taken by each one of them can make a difference. Because it is one of the central tenets of living in a democratic society, experiences of empowerment in this way can lead to a later comprehension of the importance of citizen responsibility in a democracy.

Students at this age can also begin to develop the capacity for collaboration, based on mutual respect and empathy, qualities central to survival in this interdependent nuclear age.

The purpose of exposing students in elementary school to these forms of nuclear education is not for them to then take upon themselves the burden of the nuclear dilemma. Rather, the purpose is to prepare them for later studies in school about the nuclear arms race per se.

- B. What might be accomplished in the middle grades, and what approaches are appropriate?

Beginning in Junior High School, students demonstrate a capacity for information-gathering, for a long-term future orientation and a wider world view. These developmental abilities signify the appropriateness of introducing this age student to the vocabulary and concrete facts -- scientific, technological and historical -- about nuclear weapons and how they work. These students also seem ready to link this study with an understanding of other cultures, such as the Soviet Union.

Another important aspect of nuclear education at this point would be to encourage a social service requirement,²⁰ perhaps a community internship, as a way of making a difference.

- C. What goals and objectives seem feasible and responsible in senior high school, and how can teachers implement materials that address these developmental considerations?

There are three important developmental considerations about adolescence to keep in mind: the first, cognitive; the second and third, psychological. Students of this age are capable of more abstract and theoretical thinking than middle school students. They are ready to examine the thinking behind facts and positions: assumptions, premises, values and the like. Second, these young people also tend toward

complex peer relationships. Finally, they desire identity and autonomy.

It is appropriate at this level to introduce analysis of such topics as: the history of the arms race; the long-term biological consequences of nuclear war ("nuclear winter"); nuclear policies of deterrence, peace-through-strength, the Freeze and disarmament; proliferation; questions about conventional thinking on national security in the age of nuclear weapons; and the understanding, use and limitations of statistics and facts.

Students of this age can use imaginative works, as well as history, politics and policies, to deepen their study of other cultures, the Soviet Union in particular.

The peer group issue suggests that, to encourage students to feel safe in expressing their feelings, teaching resources need to emphasize a tone of tolerance and acceptance of all opinion and provide opportunities for private expression, perhaps through journals.

Adolescents' wish for autonomy sometimes results in their rejecting opinion that derives from authority. Therefore, teachers might choose classroom lessons and units that are cooperative. For example, the pedagogical approach should assure these students that teachers do not "know" all the answers to the nuclear arms race, but rather are attempting, through discussions, to discover students' concerns, help them become more critical in their analyses, and collaborate with them in seeking new ways of thinking about the nuclear age.

A common dilemma is whether or not the subject matter of nuclear arms is best taught as a separate course or infused into already existing curricula. ESR's experiences suggest so far that, below the college level, in general basic nuclear literacy should be integrated into required courses. Most pre-college students probably are not ready for the kind of specialization that occurs in a separate course. Specifically how nuclear issues might be integrated into the standard curriculum is best explored by school faculty.

Some schools have developed one-semester elective courses on nuclear issues within the Social Studies curriculum. Student demand for these elective courses has been high.

- D. What is the academic responsibility to the issues of nuclear war at the college and university level? Are separate materials and resources available for this level?

The significant increase in course offerings about the nuclear arms race, international security and the threat of nuclear war at colleges and universities has resulted in the wide availability of several excellent college level readers and syllabi.

Learning to think analytically and critically; to challenge basic assumptions and reach one's own conclusions; to tolerate several

contradictory ideas simultaneously; and to become an independent learner; these purposes are basic to undergraduate education.²¹ A subject supremely suited to the accomplishment of these goals, the nuclear arms race can be approached at the college level both more systematically and with greater detail and depth than in earlier grades. To this end, colleges can offer for elective credit separate, specialized courses about nuclear issues, such as the history of the arms race, nonviolent approaches to conflict resolution and Soviet foreign policy. Equally important, students at this level can develop expertise through detailed knowledge of one area: SALT I and II, verification, treaty abidement of anti-satellite weapons (ASATs), for example. Further, colleges might provide majors for their students in negotiation or peace studies, or even establish peace study centers.

College teachers need to balance more the process in teaching about nuclear issues with their tendency to be fact- and lecture-oriented. Especially with controversial issues, while teaching information alone may help students to participate in the debate around such issues with more and better information, it does not necessarily result in stronger reasoning or decision-making skills.

Schools of Education based in colleges and universities require special consideration. If the study of the nuclear weapons problem is fundamental and essential to young people, then

persons preparing to teach them have an obligation to learn [about it] as well. Those who hold the responsibility of citizenship, those who are about to come into it, and especially those preparing others for citizenship have not only the right but the need to know the facts and realities of the nuclear age. More significantly, they must be equipped to deal with the issues and controversies raised by the facts.²²

5. ARE TEACHERS PREPARED TO TEACH WELL ABOUT THE RANGE OF NUCLEAR ISSUES? DOES ONE NEED TO BE AN EXPERT IN ORDER TO TEACH SUBJECT MATTER? WON'T TEACHERS INTRODUCE THEIR PERSONAL BIAS INTO CLASSROOMS?

Basic to the pedagogy of nuclear age education is frequent invitations to knowledgeable persons or experts with divergent views to speak to students about such issues as space-based weapons, the Soviet Union, deterrence, the physics of nuclear explosions and peace-through-strength. Neither classroom teachers nor university professors, therefore, need expertise in the technical aspects of nuclear issues.

Even more important, teachers are probably the best prepared people to teach about controversial issues because the key to good teaching about these problems resides in the process, more than in the content. Scientists, for instance, know the science; diplomats know the diplomacy;

economists know the economics; and so on. While information is, of course, essential for informed decision-making, feelings of empowerment and hope and logical analytical reasoning do not inexorably accrue from new knowledge.

Schools of Education at colleges and universities increasingly have begun to integrate into their teacher preparation courses basic knowledge of the nuclear threat and methodology about approaches for teaching. The Harvard Graduate School of Education, for example, offers a separate course on teaching for decision-making in the nuclear age. Such courses would necessarily address at some point in the semester the problem of the teacher's personal bias when teaching about a controversial issue. Additionally, some Education School courses provide experiences with controversial issues per se, not just with the nuclear issue.

ESR has also made teacher education a top priority. In ESR's view, while information can be presented without specialized pedagogy, the implementation of a balanced teaching approach does require a different kind of training. ESR in-service courses, workshops and summer teacher training institutes on teaching nuclear issues instruct experienced teachers in the process of dealing with bias and propaganda and similar problems.

6. IN ADDITION TO SEEKING BALANCE, WHAT OTHER CRITERIA OR GUIDELINES CAN BE USED IN THE SELECTION OF MATERIALS AND RESOURCES?

A few important guidelines to consider in the development of materials, curricula and resources and in the evaluation, recommendation and selection of them are:

A. Will the material unduly frighten young people?

The age-appropriateness of material can often be determined through understanding children's developmental stages. For example, it is commonly agreed that the ability to think abstractly does not occur in most young people until the middle school years. A concept like deterrence might be distorted, and thereby frightening, through the attempts of younger students to comprehend it in concrete terms. The first step, therefore, in choosing material that will not scare young people is that the information be consistently geared to developmental levels.

Next, knowledge per se assuages fear. Once students discover that the subject matter of the nuclear arms race is not too technical for their comprehension, that the terminology can be mastered without great difficulty, that the topic need not belong only to the "experts," these feelings of mastery of information in themselves alleviate fear.

Third, the classroom structure and atmosphere must allow for the expression and discussion of fears that do arise. Overcoming isolation of one's fear by sharing can alleviate it.

Fourth, a certain amount of fear about the nuclear threat is rational. Motivated to a degree by a fear, both superpowers have been trying to break the impasse on arms control.

Finally, nuclear issues should be presented and discussed within the context that nuclear war is not inevitable; that no one wants a nuclear war; that all "sides" in the nuclear debate believe their nuclear weapons policy has the best chance of insuring peace; and that the electorate is the ultimate power for influencing world leaders to take steps toward a safer world.

- B. Will the material lead young people to have some hope for the future?

ESR recommends that while materials be realistic and honest, they also offer a positive tone and a belief in empowerment. Like the rest of us, young people need hope for the future; not dishonest hope through rose-colored glasses, but a realistic study of the ways in which non-violent social change historically has been accomplished in our democratic society, e.g. slavery, women's suffrage, civil rights, school integration, the women's movement.

In a nuclear awareness program films, readings or guest speakers who convey only hopelessness and impotence, or who emphasize only the effects of nuclear explosions probably should be avoided or balanced by hopeful and empowering experiences.

- C. Will the educational materials help students to enter the nuclear debate as informed, critical decision-makers, truly able to make up their own mind?

If information and content are not the sole focus in the classroom, but balanced consciously with some of the processes we have been describing, students are more likely to become reasoned, autonomous thinkers and participants in public life.

7. WHAT ABOUT THE RUSSIANS? WHAT, IF ANYTHING, SHOULD STUDENTS AT DIFFERING GRADE LEVELS BE LEARNING ABOUT THE SOVIET UNION? WHAT SHOULD BE OUR GOALS AND PURPOSES IN TEACHING ABOUT THE SOVIETS? WHAT SPECIFIC APPROACHES AND MATERIALS MIGHT BE MOST USEFUL? 23

A. Rationale for study.

The state of US-USSR relations has the potential to impinge not only upon the superpowers themselves, but also on the future of all countries in the world. The global interdependence of the nuclear age -- biologic, economic, political -- is the new fact that requires the next generation, more than any other previous one, to acquire knowledge and understanding of and respect for other cultures, but especially those of our adversaries.

B. Obstacles to study.

At the outset we must acknowledge the difficulties involved in teaching about the Soviet Union. The topic of the Soviet Union is especially complex and polarized, as well as politically controversial, and these problems are compounded by the paucity of reliable sources of information. Information about the Soviets is subject to problems of ideological bias, adequate coverage and balance of treatment.²⁴ The deterioration in the last few years of the American-Soviet relationship has increased all of these difficulties.

C. Immediate Needs.

In spite of the difficulties involved in teaching about the Soviet Union, there are at least two topics that can serve at the secondary school level as an immediate basis for study. First, the history of US-USSR negotiations, because those events reside more in the realm of historical fact than in that of perception, may be more accessible to accuracy and less subject to misunderstanding than other areas of the superpower relationship. Second, the abundance of differing interpretations about Soviet intentions and society, resulting from dissension among our own Soviet specialists as well as from Soviet pronouncements themselves, can provide a source for the development of both thinking skills and an understanding of a disparate culture.

8. HOW CAN I FIND OUT ABOUT AVAILABLE MATERIALS?

One of the most valuable methods for learning about resource availability is through several comprehensive bibliographies of nuclear education materials. A clearinghouse for such bibliographies, ESR also writes and publishes instructional material for all levels. Additional sources for learning about existing materials in nuclear education are the Arms Control Association and Global Perspectives in Education.

9. WHERE CAN I GET SUPPORT FOR IMPLEMENTING NUCLEAR EDUCATION IN MY SCHOOL?

A. **PTAs.** Most recently, the 5,200,00 members of the Parent Teacher Association (PTA) passed a resolution, at their June, 1984 national convention, lending their "full and active support" to the teaching of nuclear issues in the schools. (See Section IV.)

B. **School Communities.** Increasingly, school boards and school committees around the country are passing resolutions that support the teaching of nuclear age education in their school communities. In the past year, for example, public school systems have taken action on this issues in Milwaukee, Wisconsin; Pittsburgh, Pennsylvania; Cambridge, Massachusetts; Portland, Oregon; and Dade County, Florida. (See Section IV.)

The California State Legislature has recently passed a resolution for the development of nuclear education curricula.

C. **Independent Schools.** While not formally voted, strong endorsement of nuclear literacy has also been a concern of the National Association of Independent Schools (NAIS).

D. **Professional Associations.**

The National Education Association, in collaboration with the Union of Concerned Scientists, has published Choices, a middle school curriculum on the nuclear arms race (cf. Section V for review). More recently, NEA has begun to establish statewide committees in each of the 50 states on Peace and International Education.

The National Council of the Social Studies issued a special issue of their journal Social Education devoted entirely to teaching about the nuclear arms race. The Council also has invited two workshop presenters on nuclear education to their 1984 Conference.

E. **Schools of Education.** At colleges and universities Schools of Education increasingly are integrating into their teacher education courses basic knowledge about the nuclear threat and approaches for future teachers to use at differing levels. (See Snow and Goodman, Section III.)

F. **Conferences.** Conference proceedings have been another source of support for nuclear education. For example, faculty of Schools of Education at Lutheran-related colleges recently recommended that the study of nuclear issues be integrated into basic school curricula.

G. **Educational Leaders.** Many prominent education leaders have agreed to support the implementation in schools nationwide of nuclear age education by issuing individual statements (see Section IV) and by

serving on the National Advisory Board of Educators for Social Responsibility. (See listing in front of SOURCEBOOK.)

10. HOW CAN THE EFFECTIVENESS OF INSTRUCTION CONCERNING NUCLEAR ARMS BE EVALUATED? HAS SUCH EVALUATION TAKEN PLACE?

This question has been raised from the beginning of implementing courses or units on nuclear issues. Those qualified to do accurate research, however, have rarely been the same people who are involved in implementing or teaching nuclear education. As a result, the evaluation process is only now finding its way into professional concerns.²⁵

11. HAS THERE BEEN NEGATIVE RESPONSE TO THE IMPLEMENTATION IN SCHOOLS OF NUCLEAR AGE EDUCATION? HOW HAS THIS RESPONSE BEEN RESOLVED?

Most negative response focuses on fears about frightening and indoctrinating students (see #11). ESR recommends that such concerns be taken seriously and addressed in advance and from the beginning.

One effective approach to potential concern in parts of a community about nuclear education is for the school community to involve, from the beginning of discussion and planning sessions, parents, school administrators, faculty, students and other interested educational leaders and citizens in the community. No doubt, divergent points of view will be represented in such an inclusive gathering.

Community concerns can also be alleviated by beginning the introduction of nuclear issues both incrementally and with balance. One- or two-day nuclear awareness programs, for instance, rather than a full-fledged one or an entire course, can help to mitigate adult reservations. Subsequently, basic academic courses may then integrate some of the material and approaches of nuclear education.

The inclusion from the beginning of diverse viewpoints, along with balance in materials and teaching approach, often allays community fears that students may be subjected only to one point of view or that the subject of the nuclear arms race is too "political" and controversial to be taught by the classroom teacher.

Offering in-service workshops that train teachers in nuclear education processes -- a balanced approach, a nonconfrontational classroom structure and atmosphere, democratic decision-making, empowerment -- is another means of taking seriously the concerns of the community.

12. WHAT ARE SOME REASONS PUT FORTH FOR NOT INCLUDING NUCLEAR AGE EDUCATION IN SCHOOLS? ²⁶

A. Nuclear education is "easily subject to bias and politicization in the classroom." This objection contends that because of the emotional and controversial nature of the subject, it is too difficult to present the complexity of viewpoints about the nuclear issue in a balanced way; that much of what claims to be objective about nuclear weapons in fact disguises a "hidden agenda" -- that of an anti-military tone; that this difficulty results from the advocacy nature of those who produce and promote the majority of these materials; and that these organizations, tending toward anti-military, anti-defense, pacifist, pro-Soviet viewpoints, are really seeking the subtle indoctrination of students by "manipulation through the schools to promote their policies and expand the ranks of their [peace] movement."

B. "Nuclear age education is too emotional and overwhelming." This position states that often courses per se about the nuclear arms race have "tended to create or increase students' fear, guilt and feelings of hopelessness." Moreover, such courses "challenge students with unsolvable problems [and] interfere with their progress in normal developmental tasks..." A further assertion is that the purpose of these courses is to create a sense of hysteria by raising emotions and herd the public into quick, simple solutions.

C. Nuclear education propagandizes that "anything military is... warlike and evil" and that the "U.S. is to blame for destabilizing weapons and actions." The tools for accomplishing these attitudes are the inculcation of fear about the potential of nuclear war and the future, combined with activities to encourage students' "involvement."

All of these objections deserve serious consideration. They should not be treated lightly. On balance, however, ESR believes that despite the risks implied in the above reservations, there is sufficient evidence, as set forth in the earlier responses in this Sourcebook, and in the accompanying articles in Section III, to support an education designed to encourage new ways of thinking for the nuclear age.

NOTE: For an audio-visual presentation of nuclear education pedagogy with actual classroom footage, ESR President Roberta Snow has produced the videotape A Place to Begin. A full description of this tape will be found in Audio-Visuals in Section V, Curricula and Classroom Materials.

REFERENCES

- 1 Much of the thinking about ESR pedagogy has been developed and articulated by Roberta Snow, President of Educators for Social Responsibility; Lecturer in Education, Harvard Graduate School of Education; Research Associate, Nuclear Psychology Program, Harvard Medical School. In the past year Snow's work has focused particularly on the integration of process and content. See Section V, Curricula and Classroom Materials, College/University, "Education and the Threat of Nuclear War," Harvard Educational Review, "A Decisionmaking Approach to Nuclear Education," Snow and Goodman.
- 2 "The Mood of American Youth," National Association of Secondary School Principals, 1904 Association Drive, Reston, VA 22091, p. 43. This report is based on a 1983 survey of American youth.
- 3 A complete listing of the ESR Board of Directors can be found at the beginning of this book.
- 4 Forthcoming article by Tony Wagner, Executive Director of ESR, on enlarging the center.
- 5 Voter Options on Nuclear Arms Policy: A Briefing Book for the 1984 Elections. The Public Agenda Foundation in collaboration with The Center for Foreign Policy Development at Brown University. The Public Agenda Foundation, 6 East 39th St., New York, NY 10016.
- 6 Ibid., p. 2.
- 7 Ibid., p. 3.
- 8 "The Impact of Nuclear Developments on Children and Adolescents," William Beardslee, M.D. and John Mack, M.D. Psychosocial Aspects of Nuclear Developments, Task Force Report #20, American Psychiatric Association, Washington, DC.
- 9 The Public Agenda Foundation, op. cit., p. 22.
- 10 Snow, op. cit.

Why Nuclear Education?/16

- 11
Beardslee and Mack, op. cit.
- 12
"Emerging Interest in Reasoning Skills Marks Meeting on 'Critical Thinking,'" Education Week, August 29, 1984, p. 10.
- 13
Ibid.
- 14
"When Teachers Tackle Thinking Skills." Lucille Falkof and Janet Moss. Educational Leadership, November, 1984, p. 5.
- 15
Education Week, op. cit.
- 16
Snow, op. cit.
- 17
Ibid.
- 18
In Peter Elbow's lecture "Critical Thinking is Not Enough," given at the University of Northern Iowa, April 1983, he calls this process "methodological belief." Roberta Snow has adapted the idea to nuclear education. Copies of Elbow's speech are available from ESR.
- 19
Roberta Snow, Keynote Address, Annual Meeting, Educators for Social Responsibility, Milwaukee, Wisconsin, June 23, 1984.
- 20
Tony Wagner has been focusing on the new meaning and urgency of requiring community service in nuclear age education. He discusses this point in "Educating for Character," Independent School, October, 1979, pp. 31-34.
- 21
Proceedings of the Symposium, "The Role of the Academy in Addressing the Issues of Nuclear War, Washington, D.C.," March 25-26, 1982 (Hobart and William Smith Colleges, 1982). Record of a conference organized by the provost's office at Hobart and William Smith Colleges, sponsored by the American Council on Education and the Association of American Colleges, and supported by grants from the Carnegie Corporation of New York and Rockefeller Associates.
- 22
"A Conceptual Framework for Teaching About Nuclear Weapons." Willard Jacobson, Betty Reardon and Douglas Sloan. Social Education, November/December, 1983, p. 475.

23

These questions were the focus of a day-long ESR working session in Cambridge, Mass. on December 7, 1984, directed by Roberta Snow, on teaching about the Soviet Union. A summary of the meeting will be available from ESR. The winter, 1985 issue of ESR's newsletter Forum will be devoted entirely to the pedagogy of teaching about the Soviet Union.

24

These points are taken from "The United States as Portrayed in Geography and History Textbooks in the USSR," Howard D. Mehlinger, Social Education, 1981, pp.234-238.

25

"Curriculum for Security in a Nuclear Age," Helen L. Carlson, The Social Studies, May/June 1984, pp.95-101 looks at learning outcomes from an Arms Control Association model curriculum for secondary education entitled, "Security in the Nuclear Age." Evaluation work is also being implemented by Gloria C. Gordon, Ph.D., Associate Research Professor, Department of Psychology, Saint Louis University, Center for Application of Behavioral Sciences, 221 North Grand Boulevard, Rm. 316, St. Louis, Missouri 63103.

26

Most of these concerns are summarized from a minority report of the Peace Studies Task Force, presented to the Milwaukee, Wisconsin school board, written by John Kwapisz, now a Field Director for the American Security Council Foundation. The quotations are taken from the same report.

SECTION II

SUMMARIES: STUDIES OF
CHILDREN IN THE NUCLEAR AGE



WINTER, 1984

FORUM

Children and Nuclear War

FORUM is a new section of the IPPNW Report featuring studies of a single topic related to the medical effects of nuclear war and the nuclear arms race. The purpose of the section is to promote informed dialogue among physicians and others committed to the prevention of nuclear war. Suggestions for future FORUM topics and submissions of papers are welcome.

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Research on the Impact of the Nuclear Arms Race on Children in the USA

by John E. Mack, M.D.



An eleven-year old girl recently asked her parents if she would have time to commit suicide in the interval between learning that nuclear bombs were on the way and their actual detonation. This reminds us of the fact that many children and adolescents are troubled about the threat of nuclear war, but also that their fears, especially in the case of young children, need to be considered in relation to other developmental issues and concerns. The data available so far about what American children and adolescents think and feel about the threat of nuclear war is limited. There are methodological limitations in the size and percentage of compliance in the studies and in the age, geographic and socio-economic distribution of samples. The studies have been largely performed by people who are themselves personally concerned about this issue and may at times reflect a researcher bias. Nevertheless, preliminary findings from investigations conducted in the past few years have raised concerns among adults about the impact of the nuclear weapons race upon the lives and development of children and adolescents in the United States.

Questionnaire studies on an emotionally laden topic such as this suffer from the fact that the complex thoughts and feelings which the subject elicits cannot be simply categorized. For example, many young people seem not to be involved by the nuclear threat. Does this mean they are truly not involved or are they defending themselves emotionally? Some children's concerns seem to be below the surface. An eleven-year old boy in my neighborhood, after he

was interviewed by a teacher about his thoughts on the nuclear issue, said that until that time he had not known "how much it was on my mind." One ninth grader in responding to a question as to whether the nuclear threat had affected his plans for the future wrote "No, No, No" in letters over an inch high. How are we to categorize such a response — as a yes or a no?

Summary of Research

The only survey with a broad sample that addresses specifically the concerns of young people about nuclear war was conducted by Gerald G. Bachman and his colleagues at the Institute for Social Research of the University of Michigan. From 1975 to 1982 they administered questionnaires to 16,000-19,000 seniors from 130 public and private high schools across the country. To the question "of all the problems facing the nation today, how often do you worry about the chance of nuclear war?" Bachman found a fourfold increase from 1975 to 1982 of those who worry "often." Bachman and his co-workers also found a 61% increase during this period of those who agreed or mostly agreed with the statement "nuclear or biological annihilation will probably be the fate of all mankind within my lifetime."

The first questionnaire studies on the nuclear war issue were designed by psychologist Sibylle Escalona and Milton Schwebel in response to the Cuban Missile Crisis. Both were published in 1965. Escalona examined 311 children from widely different socio-economic groups and ranging in age from 10 to 17. Schwebel sent questionnaires to 3,000 junior and senior high school students of various socio-economic backgrounds and asked questions such as "Do you think there is going to be a nuclear war?", "Do you care?", "What do you think of fallout shelters?" Both Escalona and Schwebel found a greater degree of fear of war and uncertainty about the future than they had anticipated. Escalona observed, "The profound uncertainty about whether or not mankind has a foreseeable future exerts a corrosive and malignant influence upon important developmental processes in normal and well-functioning children."

In 1977 the American Psychiatric Association appointed a task force to study the psychosocial impact of nuclear advances. Among the subjects to be studied was the

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impact of nuclear developments on children and adolescents. One thousand one hundred and fifty one (1,151) questionnaires were administered to children from the 5th through 12th grades in the Boston, Los Angeles, and Baltimore areas. More detailed responses were obtained from 75 children in two high schools in the Boston area where the examiners spent additional time in the classroom with the teenagers. The questionnaires were administered in 1978, 1979, and 1980. The results were gathered by Dr. William Beardslee and myself and published in the Task Force Report in 1982. Questions asked included: "What does the word 'nuclear' bring to mind?", "How old were you when you were first aware of nuclear advances?", "What do you think about civil defense?", "Do you think that you could survive a nuclear attack?", "Have thermonuclear advances influenced your plans for marriage, having children or planning for the future?", and, "Have thermonuclear advances affected your way of thinking? (about the future, your view of the world, time?)." The questionnaire underwent some revisions between 1978 and 1980 in order to facilitate quantitative scoring. Approximately 40% of the total group reported they were aware of nuclear developments before they were 12. Although the majority of the overall group studied thought that civil defense would not work, a considerable percentage considered it essential. Approximately 50% of the 1979 sample of 389 high school students reported that nuclear advances had affected their thoughts about marriage and their plans for the future. A majority reported that nuclear advances affected their daily thinking and feeling.

Among the more detailed responses of teenagers from high schools in the Boston area there were vivid expressions of terror and powerlessness, grim images of nuclear destruction, doubt about whether they will ever have a chance to grow up and an accompanying attitude of "live for now." Some expressed anger toward the adult generation that seemed to have so jeopardized their futures.

In the last two years there have been several additional questionnaire studies. High school senior Jon Klavens administered a modified version of the APA questionnaire to 950 students at Newton North

High School in Newton, Massachusetts. Thirty-four percent of the students thought nuclear war would occur in their lifetime while 52% were unsure. Sixty-two percent thought the threat of nuclear war was increasing. Over half reported that the threat had affected their thinking about the future and their sense of time. Family practitioner Stephan D. Hanna administered the APA questionnaire early this year to 700 11-19 year old students in the Akron, Ohio area. A higher percentage than in the Beardslee/Mack studies associated the word nuclear with destructive imagery as opposed to peacetime uses. The intensity and pervasiveness of expressions of fear, helplessness and cynicism and anger toward the adult generation was also greater than in the APA study.

Psychologist Richard L. Zweigenhaft in conjunction with the Greensboro-Guilford County Emergency Management Assistance Agency in North Carolina administered a 51-item questionnaire in November, 1982 to 938 adolescents and adults living in this area, including 372 high school students. Sixty-two percent of the total sample expected nuclear war to occur in their lifetimes while 66% were worried or very worried about the use of nuclear weapons. Sixty-three percent thought that nuclear war was prophesized in the Bible. The Greensboro-Guilford County study also disclosed troubling ignorance about fundamental nuclear realities. Only 70% of high school students knew which country has used nuclear weapons in war; 15% was the mean estimate of how long it would take Soviet nuclear missiles to reach this country. There was much misinformation disclosed about what the post nuclear attack world would be like, although the great majority expressed the wish for more information.

In October 1982, Educators for Social Responsibility sponsored a day long symposium on nuclear issues called "Day of Dialogue." Many thousands of questionnaires containing questions similar to those in the initial APA study were distributed to high school students across the country. The results of 2,000 randomly selected responses were examined from among a larger number collected in Massachusetts, Wisconsin, Oregon, and California. Eighty percent of those responding thought that there would be a nuclear war in the next 20 years and 90% of these reported that if such a war

occurred, the world would not survive. Eighty one percent said that the threat of nuclear war affected their hopes for the future, while 34% said it was having an impact on having a family or planning to get married.

Psychologist Ronald M. Doctor and his co-workers at California State University have administered a questionnaire developed by pediatrician John Goldenring to 913 junior and senior high school students in Los Angeles, San Fernando Valley, and San Jose areas. In order to overcome methodological bias, or disclosure of the examiner's agenda which takes place when specific questions are asked about the nuclear issue, these researchers have embedded the nuclear war question among twenty items. Drs. Eric Chivian, Jerry Waletzky, and myself used the Doctor-Goldenring questionnaire as the basis for a comparative study of Soviet children conducted in July, 1983.

Last year, psychology student Lisa A. Goodman, with myself and co-workers at the Cambridge Hospital, Harvard Medical School, conducted a pilot study. The purpose of the study was to begin to learn in greater depth how teenagers perceive the nuclear threat and to gain knowledge about their attitudes toward the political process.

Teachers, parents, and counselors helped Goodman locate students from several communities in the Boston metropolitan area. Seventeen girls and fourteen boys ranging in age from 14 to 19 were interviewed in July and August, 1982. The teenagers were from diverse religious and socio-economic backgrounds. As was revealed in the questionnaire studies, Goodman and her colleagues found widespread fear, sadness, helplessness, cynicism, and anger among the teenagers. Each interviewee thought that nuclear war would come in his or her lifetime. Some seemed to live on two levels, planning as if there were a future, while believing nuclear annihilation to be inevitable. Civil defense was dismissed by all of these teenagers as useless, while none believed that a nuclear war could remain limited. Nuclear weapons seemed to offer little sense of security, although the interviewees would not wish to live in a situation where the Soviets had nuclear weapons and America did not. Some of these adolescents resisted stereotyping of the Soviet Union, acknowledging that they are "supposed to be our enemy."

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Some distinguish the Soviet government or "system" from its people. Both superpowers are held responsible for the arms race, which is perceived as dangerously out of control with a momentum of its own.

Summary

In summarizing I will set forth what I believe may be objectively concluded from the findings of these studies and add to that interpretations and conclusions of my own that I believe may be derived from these data:

1. Many children in different parts of the country are concerned about the threat of nuclear war and experience troubling feelings of fear, sadness, powerlessness, and rage.
2. The meaning of this concern varies according to the developmental level of the young persons.
3. Worry about the nuclear threat has increased in the period 1975-1983, as the nuclear arms competition has appeared to become increasingly out of control.
4. An important part of this sense of things being out of control is the perception that authority for nuclear war has slipped out of human control and has been taken over by technology.
5. Children and adolescents seem less defended than adults and more able to perceive the reality of what nuclear weapons can do and what nuclear war would really mean for them, their families and the world.
6. There are great variations in the amount of information children and adolescents receive. Television appears to be the chief source of information.
7. Many children feel they have no one with whom they can discuss the nuclear problem. They feel alone with their fears and abandoned, isolated and unprotected by the adult generation, including their nation's leaders. This adds to the sense of hopelessness and creates cynicism.
8. Many young people express uncertainty about whether there will be a future. This futurelessness has raised questions for a number of investigators about the possible impact of the nuclear threat on personality development in childhood and adolescence. There is no systematic data on this subject.

Recommendations

1. Further careful research is needed to learn about the impact of the nuclear arms competition on children and adolescents.
2. Educational programs are needed which provide accurate information about nuclear science and technology and the political, historical, and cultural realities of the arms competition, including the objective study of the history and psychology of enemies and potential enemies.
3. We need to create opportunities for young people to be able to talk about these troubling matters with responsible adults in their homes and in their schools and communities, so they can participate appropriately in the national dialogue relating to nuclear weapons.
4. There is a need to broaden our conceptions of security to include considerations of health and, in the case of the impact of nuclear weapons on children and adolescents, psychological health and well being as well.
5. New approaches to achieving security are needed, which include examination of the dimension of human relationships in war and peace-making in addition to purely military and technological considerations if we are to create for our children confidence in the future, and freedom from fear.

The problem of security in the nuclear age cannot be resolved by technological means alone, no matter how ingenious. The nuclear threat is largely the creation of human beings who cannot resolve their relationships with one another in the political realm. Our young people know this and they know too that the work of securing the future requires new ways of approaching relationships in the political and cultural domain, just as improvement in the emotional climate in a household is brought about by changing the quality of relationships among members of a family.

■

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What Soviet Children Are Saying About Nuclear War

By Eric Chivian, M.D. and Joseph Goodman



In the summer of 1983, five Americans, three of them psychiatrists active in IPPNW, arrived in Moscow to begin work on what was to become a pioneering study of the psychological effects of the threat of nuclear war on children in the Soviet Union. The team members were Dr. Eric Chivian, project director and treasurer of IPPNW; Dr. John Mack, co-investigator and professor of psychiatry at Harvard Medical School; Dr. Jeremy Waletzky, co-investigator and associate clinical professor of psychiatry at George Washington School of Medicine; Susanna Chivian, project recorder; and Cynthia Lazaroff, project translator. The project had received co-sponsorship from IPPNW and the Harvard Medical School Department of Psychiatry's Research Program for the Study of Human Continuity.

With the cooperation and assistance of Dr. Evgueni Chazov, co-president of IPPNW, the team was able to set up their investigation with Soviet children at two summer camps. The study, designed to parallel studies done in the United States, was composed of two parts—videotaped interviews and a questionnaire survey. American investigators had learned that American children know a great deal about nuclear weapons and are deeply affected by this knowledge. The objective of the IPPNW study was to learn whether Soviet children were similarly informed and affected.

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The study would attempt to answer a number of questions, including the following: How and when did Soviet children find out about nuclear weapons and their effects? What did they know about these weapons? Did they think a nuclear war will occur in their lifetimes? Did they believe that they and others could survive a nuclear war, and, in particular, did they believe that shelters would help them survive? Finally, how did Soviet children feel about this subject and did they think children could do something to prevent nuclear war?

The study was carried out at two Pioneer Camps. There are approximately 24 million Pioneers in the Soviet Union, essentially all children between the ages of 10 and 15. During the summer, most Pioneers attend the more than 50,000 camps located throughout the country. The IPPNW team visited Gargarin, a camp of 350 children named after the Soviet cosmonaut and located near Moscow, and another, much larger camp called Orlyenok, which is located on the Black Sea in the Caucasus and houses approximately 2800 children. Most of the children attending Gargarin came from the Moscow area; their parents worked at a domestic airport outside the city. In contrast, campers at Orlyenok come from cities and towns throughout the Soviet Union and become eligible to attend this camp after winning academic, athletic, artistic, or citizenship competitions. Some of these children had already distinguished themselves in remarkable ways; for example, ten Orlyenok campers had saved lives in fires in their communities.

The team was given free access to both camps and often spoke informally through their own translator with the children and participated in camp activities. These were memorable occasions for both children and investigators. None of the Soviet children had ever met Americans before, and face-to-face meetings helped both the children and adults to narrow the gulf of understanding that usually separates Soviet and American cultures. The team did not discuss in advance what they would ask in the interviews or on the questionnaires, and the interview process was carefully designed to ensure that the children in the camps had not been prepared or prompted in any way.

The Interview Study

For the interview section of the study, children were chosen by the team or recommended by other children who were members of camps' governing councils. In all, approximately 60 children between the ages of 10 and 15 were interviewed. A highly skilled Soviet television crew assisted the team in videotaping and recording the interviews, then turned over to the team all of the unedited, uncensored tapes so that the material could be brought back to the U.S. for translation and technical preparation.

From nearly nine hours of videotaped interviews, Dr. Chivian chose a representative sample and produced a 21-minute tape, "What Soviet Children are Saying About Nuclear War." This tape was released to the news media on October 13, with dramatic results. Three U.S. national television networks, PBS, NBC, and ABC, used significant portions of the tape; and subsequently television networks in Canada, Japan, and other nations also broadcast the interviews. The tapes and the questionnaire study also received coverage in national and international media including the New York Times, Boston Globe, Washington Post, National Public Radio, United Press International, Associated Press, the London Times, Pravda, Tass, Reuters, and the BBC.

In the videotape, the children are remarkably poised and articulate. Their words are unguarded, but bear eloquent testimony to the fact that children are already experiencing the same deep anxiety over nuclear war as are millions of adults. It is clear that, in the Soviet Union, as in other countries of the world, mass media carry the message of the consequences of nuclear war to children and that this information complements what they receive at school and from their parents.

The videotape effectively breaks down stereotypical concepts about Soviet life and Soviet children. The tape makes clear that Soviet children are no less affected by the menacing threat of nuclear war than children in the U.S. and other countries, nor are they less well informed. The children demonstrate that they are acutely aware of the medical consequences of nuclear war,

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I remember seeing a film on Hiroshima. On a bridge that was located not far from the epicenter of the explosion the only thing that was left of people were their shadows. In an explosion that would happen now, an explosion that would be so much more powerful than that one, it is hard to imagine what would happen. I can't imagine what would become of people, if one such explosion could destroy so many people, and to this day people suffer so much from that.

- Katya, Age 12, Moscow



You couldn't survive a nuclear strike. The nuclear radioactivity remains for a very long time. And even if a person goes underground, no matter how much he wants to live, he wouldn't.

- Sergei, Age 13, Moscow



There is a film that tells how a war almost broke out between America and the Soviet Union, and after it "I didn't sleep for several nights thinking about this, about how war almost broke out and how our existence is hanging on a thread."

- Oleg, Age 15, Ukraine



The photographs above were taken by Dr. Eric Chivian at the Gagarin and Orlyonok Pioneer Camps in the USSR. The quotations are not necessarily those of the children shown, but are taken from the videotape, *What Soviet Children Are Saying About Nuclear War*, available through the IPPNW Central Office.

Everyone thinks about their children. And we can help them by struggling against nuclear war - by sending letters, designing banners. These are the things that we can contribute to the struggle against nuclear war. Then they will understand that their children don't want war either.

- Oleg, Age 14, Yakutsk

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that they have no faith in surviving nuclear war regardless of civil defense procedures, and that they recognize the danger of accidental nuclear war. One thirteen year-old responded to being asked what would happen in a nuclear war by saying, "The entire earth will become a wasteland."

It is worth pointing out that these children, and their American counterparts, may represent a significant minority who have found it possible to overcome some of their anxiety and feelings of helplessness by articulating their thoughts and emotions, and by participating in school or community activities aimed at achieving peace. Other children may be as deeply, but less consciously affected. Indeed, children who are not so well informed or supported, and who are not yet able to define and express their feelings, constitute a population who may be suffering significant psychological damage. These children, as well as those who express their concerns about nuclear war, deserve our study and care.

The Questionnaire

The affective impression of the videotaped interviews is reinforced by the more scientific findings of the questionnaire study. The questionnaire was adapted by Drs. Chivian, Waletzky, and Mack from a similar study of California High School students done by Professor Ronald M. Doctor, Dr. John Goldenring and their co-workers. In the American poll, nine hundred students from six different California high schools were asked several questions relating to their concern about nuclear war.

The Soviet children were asked the same questions. The children were from the Orlyenok Camp and selected in the following way: a sub-camp of Orlyenok, the Sun camp, was picked by the American team on the evening before the study. Approximately 400 children of the 700 at the Sun camp were brought to a large meeting room, 293 questionnaires were passed out, and those who did not get a questionnaire left. The children were not informed of the subject of the questionnaire beforehand. They were instructed to answer the questions as best they could, without consultation with their neighbors. They were told further that there were no right or wrong answers and that they should not sign their names. They left the room after completing

the questionnaires. The Soviet children ranged from 9 to 17 years old with a mean age of 12.7 years. About 60% were girls.

There were two sections to the survey. In the first section, children were asked to rank their degree of worry for a variety of concerns, from "not at all worried" to "very worried." Almost all of the Soviet children were "very worried" about nuclear war compared to the American children who were significantly less concerned.

The figures below compare the Soviet sample with an age-matched sub-sample of 200 American children (with a mean of 13.2 years old). For each question, those surveyed were asked to select one of the following possible answers: "definitely yes.... definitely no." In the data below, "yes" answers include both "definitely" and "probably yes" and "no" answers include both "definitely" and "probably no."

Questions

Do you think a nuclear war between the US and USSR will happen during your lifetime?

	SOVIET	AMERICAN
Yes	11.8%	38.4%
No	54.5%	16.9%
Uncertain	33.7%	44.8%

If there were a nuclear war, do you think that you and your family would survive?

	SOVIET	AMERICAN
Yes	2.9%	16.4%
No	80.7%	41.3%
Uncertain	16.4%	40.8%

If there were a nuclear war, do you think that the US and the USSR would survive it?

	SOVIET	AMERICAN*
Yes	6.1%	21.9%
No	78.9%	37.8%
Uncertain	15.0%	39.8%

* American children were asked only about survival of the US.

Do you think nuclear war between the US and the USSR can be prevented?

	SOVIET	AMERICAN
Yes	93.3%	65.2%
No	2.9%	14.5%
Uncertain	3.9%	19.9%

Conclusions

- Soviet children, like American children, have detailed, accurate information about the effects of nuclear weapons that they first learn at a young age, primarily from the mass media, but also from schools and their parents.

- Both Soviet and American children express concern about the possibility of nuclear war with Soviet children being even more worried than American children. Children from both countries voice an anxiety that nuclear war could break out at any moment and demonstrate feelings of despair and helplessness as well as a belief that they may not grow up.

- Neither Soviet children nor American children believe in survival following a nuclear war, either for themselves, their families, or their countries. Soviet children are even more pessimistic than American children about survival, and have no faith in civil defense protection.

- Soviet children are more optimistic about nuclear war being prevented than American children; only a small percentage of the Soviet children studied believed a nuclear war would occur in their lifetimes compared with more than 1/3 of the American children. Perhaps this optimism is related to the fact that many Soviet children take part in activities directed at preventing nuclear war.

Although there were some significant differences between Soviet and American children, the similarities were even more striking. Both were affected by their knowledge of nuclear weapons' effects in ways that may well damage their normal growth and development. These are among the hidden costs of the nuclear arms race and the Cold War and will become a major focus of investigation for IPPNW.

This project is a preliminary one, and will hopefully be the beginning of an in-depth study of the effect of living with the threat of nuclear war on children in countries around the world. As is true for other projects in IPPNW's East-West program, the Soviet children's study demonstrates the benefits of close cooperation and mutual trust between physicians in East and West.

WINTER, 1984

European Research on Children and War

by Vappu Taipale, M.D.



We now stand at a major turning point. Investigation and research on the somatic effects of nuclear war is exhaustive and scientifically established. But the same cannot be said for research on mental health with relation to nuclear war. The valuable report on the effects of nuclear war recently published by the World Health Organization (1983), for example, leaves the field unexploited. As a child psychiatrist, I am especially concerned about the lack of research on the mental health of children in relation to the threat of nuclear war.

The first basic question is why so little research has been performed in this field. A comparison with any other area of medical research shows that the available source material on the psychological impact of the nuclear war threat on children is indeed meagre. Ordinary data search methods do not turn up any material. Examples of limited local research traditions arising from the conscientious work done by individual psychiatrists, child psychiatrists and physicians can no doubt be found the world over but not as a branch of an established field of science.

So far, research on the general topic of children and war has fallen into three categories: children's conceptions of war and peace, how children experience war, and children's responses to living under sustained stress of violent conflict. These starting points must be critically reevaluated.

The emergence of peace research by social scientists in the 1960s has given birth to studies of a child's conception of

war and peace. Many of these studies originate in the Nordic countries, a sector of the globe that has enjoyed long periods of peace and security (Roiell 1968, Alvik 1968, Nummenmaa 1972). These studies have underscored the fact that the process of socialization differs for girls and for boys. Adult society teaches the sexes different views of themselves and their future obligations; boys learn to defend their nation and girls the home. A recent study conducted in the Federal Republic of Germany (Buttner 1983) describes the helplessness experienced by girls and the aggressive "arming" of boys in their images of war.

The conceptions of war and peace are imbalanced with regard to each other. The images and concepts of war, and particularly conventional war, are ambiguous and the concept of peace remains clouded. The mind of a child seems to define peace mainly in terms of the absence of war. Most children do not have a positive conception of peace, or view peace as the prerequisite for life. In this sense children evidently mirror the conceptions of the adult world.

Children's conceptions of war and peace are influenced by their phase of development, the family, friendships, formal education, and the media. Children pick up opinions from newspapers and television, reinforcing the attitudes acquired at home (Tolley 1974). The massive habituation to violence in mass entertainment culture begins to influence children's values, attitudes and behavior from early school age. This pattern may overshadow the influence of home. On the other hand, structurally disrupted homes may create a need to display the children's frustrations in excessive use of violence in culture.

While these three areas of research are useful, the findings do not tell us a great deal about our current dilemma. Considerably fewer researchers have dealt with the situation of children who live under the threat of a nuclear war. Pioneering research, conducted mainly in a questionnaire or interview method, originated in the United States in the 1960s. It has not endeavored to include a psychological evaluation at the children's entire environment of growth and life situation. Some of these studies have been extensive, however (Escalona 1962, Schwebel & Schwebel 1981, Beardslee & Mack 1982).

The results were surprising in that children of various ages very frequently reported concern about the possibility of nuclear war as a concretely-felt menace to their future. Findings point to the same direction, both in the USA and in Europe. The same anxiety is expressed even when the researcher has not explicitly referred to the threat of nuclear war when mapping a child's fears and wishes. The lack of confidence children have in the adult generation also seems to be spreading as they become more cynical and rebellious. The day-to-day life of families with children provide evidence for these studies. Persons working with and living among young children must on occasion answer children's stirring questions about war and peace.

In an ongoing Finnish survey, concerning a representative sample of Finnish twelve to eighteen year-old youngsters (N=6800) we can see that the foremost fear the youngsters have about their own life and future is the fear of war. Three youngsters out of four are afraid of war more than anything else. Girls are especially sensitive to experience and express strong anxiety (30-40%). As psychiatrists we are especially concerned about a group, some 10% of the sample, whose thoughts go back to the threat of war almost every day (Solantaus *ym.* 1983).

The existence of nuclear weapons has altered the entire world. We must face the fact that the environment of the growing child has totally changed as well. It is only natural and sensible for our children to react to it.

The second category of research concerns how children experience war. Reports on this area are available from Britain, Poland, the Soviet Union and Scandinavia, largely describing the era surrounding the Second World War. These studies reveal, for instance, children's immediate reactions of fear during bombing (Bodman 1944). They also serve as documents of the distress by hundreds of thousands of children who through no fault of their own have suffered the ravages of war. A study by Anna Freud and Dorothy Burlingham (1943) stands as a classic in this field. According to their findings, children of the war era experienced greater anxiety when they were evacuated and separated from

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their parents than if they had faced the horror of war together with their parents. Only a few documents by children themselves are available, such as drawings by children held in concentration camps or descriptions of the experiences of the children of Hiroshima (Children of Hiroshima, 1981). More material on the war experiences of children has been retrospectively fictionalized in literature, even in children's literature.

The third aspect of research focuses on children living today in war conditions and on the effects on children growing up under these circumstances. Material is available in Europe, for instance, from Northern Ireland (Harbison 1983), as well as from Israel (Punamäki 1982). Such studies convey a message of the harsh environment in which children grow to adulthood. Children develop permanent enemy relationships and unrelenting aggression. Long-term barbarizing effects seem to emerge in the teenage years in particular, while younger children are most effectively sheltered by their parents. The process of socialization seems to assume a similar pattern for girls and boys, especially in the Middle East where significant role differences can no longer be distinguished.

Our research must begin nearly from scratch. We have until now progressed only to the point of charting the opinions and thoughts of children and youngsters of different ages as well as their fears and dreams. A true scientific undertaking is

required before the real impacts on mental health can be outlined from these points of departure. Nevertheless it is our duty to close this gap. A welcome surge in research activity in this field seems to be in sight in this and the coming year.

Only a few decades ago it was believed that the best way to provide sex education to children was a summary introduction presented upon reaching the age of puberty. Behind this was a good intention: children were allowed to be children. Among the important developmental steps within psychiatry has been the discovery of the disturbing effects this procedure gave rise to and how important it has been to free the creativity that has been chained by false protection.

Adults must bear the overall responsibility for helping children and channel their fears into positive action. If our children inherit only despair, the burden of responsibility will be too heavy for them. Then we would deprive and exploit our own children, when we should, in fact, do everything in our power to nurture and support them.

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NUCLEAR WAR AND YOUTH

Research Symposium 1, The Impact of the Threat of Nuclear War on Children and Adolescents, was attended by 80-100 delegates and observers representing a variety of disciplines in medicine, psychology, and education. There were four lectures of a general nature, covering a history of research on the effects of the threat of nuclear war on children and adolescents, methodological problems of research in this area, the relation of the nuclear threat to child development, and models of cognition and fantasy about nuclear war among young people. Original research reports of studies done on children and adolescents from Belgium, Canada, Finland, Japan, the Middle East, New Zealand, the Soviet Union, Sweden, the United Kingdom, and the United States were presented.

Following are excerpts from two of the reports presented at the Research Symposium:

Excerpts from "A Survey of Attitudes of Swedish Adolescents Toward Nuclear War"

P.O. Holmberg, M.D. and Alexandra Bergstrom, M.A., with the assistance of the Swedish Institute for Opinion Polls.

This survey is partly an adaptation of a survey made by Ronald M. Doctor, Ph.D., professor of psychology, California State University, Northridge, and John Goldenring, M.D., M.P.H., Loyola Marymount University, Los Angeles, with the permission of the authors. Eric Chivian, M.D., staff psychiatrist at Massachusetts Institute of Technology, adapted this Californian study to measure the responses of Soviet children to the threat of nuclear war. No such survey has been made previously in Sweden.

This survey was distributed to 41 schools in both urban and rural areas of Sweden. The data presented come from 917 adolescents. The students were given the survey in the classrooms. The teachers were instructed not to tell the students beforehand that they would be filling in a questionnaire.

We have rated teens' concerns about nuclear war in comparison to other worries, some of which are known to be of significance to them from past psychological studies. In this way we avoided "clueing in" the teens to the fact that we were particularly interested in their worries about nuclear war. They were asked to rank their top three out of fourteen worries: among the choices were "parent dying," "pollution," "not being able to find a job," and "nuclear war." Only after this were they asked any questions specific to the issue of nuclear war.

The number one worry both in mean score and in percent ranking was "nuclear war." The mean score was 3.20, with 42 percent listing it as their greatest worry. (Mean score is determined with the following weights: very worried - 4; moderately worried - 3; worried a little - 2; not at all worried - 1)...

The fact that nuclear war is the top fear in our analysis is extraordinary. It is clear that very significant numbers of teenagers in Sweden, which is a non-aligned, non-nuclear, neutral country and which has not been at war since 1814, are very concerned about the possibility of nuclear war - so much so that 42 percent of them consider this a greater worry than their parents' death.

When asked if they ever thought about nuclear war, 24 percent said "daily" or "once a week"...

The students were also given a survey and asked to reply to a variety of questions on a scale from "definitely yes" to "definitely no." On the vital question of whether they thought a nuclear war between the US and the USSR would occur within their lifetime, five percent responded "definitely yes." Twenty one percent said "probably yes." Only eight percent said "definitely no." Eighteen percent said "probably no" and the rest, 47 percent, were "not sure." (See Table.)

Roughly two-thirds of the sample state that the US, the USSR and Europe would not survive a nuclear war. When asked if a nuclear war could be prevented, 45 percent of the Swedish students said "probably or definitely yes," but as many as 23 percent said "probably no" and nine percent said "definitely no." (Seventy six point six percent of the American students answered

Question	SOVIET (%)			SWEDISH (%)			AMERICAN (%)		
	Yes	No	Uncertain	Yes	No	Uncertain	Yes	No	Uncertain
Do you think a nuclear war between the US and the USSR will happen during your lifetime?	11.8	54.5	33.7	26	26	48	38.5	16	44.5
If there were a nuclear war do you think that you and your family would survive?	2.9	80.7	16.4	6	68	26	16.5	41.5	41.1
If there were a nuclear war, do you think that the US and the USSR would survive it?	6.1	78.9	15	13	64	23	22	38	39.5
Do you think nuclear war between the US and the USSR can be prevented?	93.3	2.8	3.9	45	32	23	65	14.5	20

Key: Yes = Definitely or probably yes
No = Definitely or probably no

*From "What Soviet Children Are Saying About Nuclear War," Eric Chivian, M.D., published by IPPNW, 1983.

* American children were asked only about survival of the US.

NUCLEAR WAR AND YOUTH

"probably" or "definitely yes.") Thus, we determine that Swedish teenagers are more pessimistic than American teenagers. Only six percent of the sample felt they or their families would survive a nuclear war.

But there is optimism, too. When asked what they thought could be done to prevent a nuclear war, more than three quarters of the teenagers showed faith in disarmament negotiations and/or the efficacy of broad-based movements against the arms race.

What worries Swedish adolescents very much is the fact that adults seem indifferent to the issue of nuclear war. Only 17 percent think the adults are "very worried" about the threat of nuclear war. Forty six percent think "adults seem very little concerned." Ten percent think adults are totally "indifferent." Twenty six percent don't know what the adult attitude is at all...

There appears to be a communication gap between the generations which adolescents are filling with fear instead of hope. The threat is ignored in the home and in the classrooms. Now is the time to begin talking honestly with youth about the threat of nuclear war in families, in schools, in churches, and in communities throughout the world.

Excerpts from "Children's Mental Health and the Threat of Nuclear War: A Canadian Pilot Study"

Frank Sommers, M.D., Susan Goldberg, Ph.D., Dvora Levinson, Ph.D., Christopher Ross, Ph.D., Suzanne LaCombe, B.A.

What impact does living in the nuclear age have upon the emotional and psychological development of Canadian children and youth? In the current study, we surveyed 1011 students from grades 6-13 in three Toronto school boards. Although the three samples differed in socioeconomic status, ethnicity, and educational levels, the data were remarkably similar.

Students first reported their three main hopes and worries about the future. Worries about nuclear war and unemployment were mentioned equally often (by 51 percent of the sample), although nuclear war was most likely to be mentioned first (by 29 percent of the sample compared to 20 percent for unemployment). Work or employment was the most frequently mentioned hope (81 percent of the sample). Worries about nuclear war declined with increasing age, while worries about unemployment increased. Comparison of responses to similar questions about unemployment, personal job plans and the threat of nuclear war indicated that: 1) Job/career plans were a more consistent preoccupation (37 percent reporting daily concern) than unemployment (eight percent) or nuclear war (ten percent); 2) Unemployment, nuclear war, and job plans, were equally likely to give rise to persistent anxiety (eight to nine percent reporting daily fears); 3) Students felt they, their parents, and Canadians in general had least control over the threat of war, followed by unemployment and job plans.

This study provides evidence that Toronto youngsters, ages 12 to 18, feel their greatest worry to be the threat of nuclear war. While 63 percent of our young people report some fear or anxiety over the nuclear threat, a full ten percent report daily thoughts on nuclear war.

When it comes to preventing nuclear attack, 62 percent of them feel they have no personal influence, 60 percent feel their parents have no influence, while 49 percent feel Canada has no, or only a little influence.

Despite these feelings, or perhaps because of them, the threat of nuclear war is the least talked about subject in the home, when compared with unemployment and job and career plans...

The great majority of those interviewed stated that neither they nor their parents have taken any actions to prevent nuclear war. Yet they do have opinions as to what might help. Eighty-three percent think that testing the Cruise missile in Canada will not help prevent nuclear war. Over 80 percent think that the West having more nuclear weapons than the Soviets will not help prevent nuclear war, and Canada

doing its share in the manufacture of nuclear weapons won't help either. Interestingly, 80 percent oppose Canada's withdrawal from NATO, yet only 57 percent feel that support for NATO will help prevent a nuclear war. Seventy three percent support a nuclear freeze and 53 percent favor making Canada a nuclear weapons free zone.

Clearly, this study shows that Toronto youngsters are worried about the threat of nuclear war. But this appears to be a worry kept largely to themselves. What is the implication of this?...

It is equally clear from this study that most of our children do not feel empowered, nor do they perceive their parents as empowered to do something significant to help prevent nuclear war. It is worthwhile to ponder: is this learned helplessness? Is it reinforced by the kind of parenting our children receive, especially early in life? Is it reinforced, rather than challenged and altered by our educational system? And what, if any, role do the media play in all this?

It is also important to wonder what is the cost to our young people's mental health, to be held hostage to weapons they cannot see, hear, nor touch, operated in secrecy by faceless men that threaten sudden annihilation or lingering radiation-induced death.

The ten percent of adolescents who admit to daily thought about the nuclear threat are perhaps the most traumatized. They may represent a critical group indicating a need for urgent intervention.

Our homes and schools do not, as yet, appear to be major places of learning about nuclear war. Yet the nuclear threat is molding the future plans and present lifestyles of many young people.

Readers interested in receiving a transcript of the proceedings of the Fourth Congress Research Symposium on The Impact of the Threat of Nuclear War on Children and Adolescents, as well as complete texts of papers presented, should write to the IPPNW Central Office. We anticipate publication by mid-October.

SUMMARY OF OTHER STUDIES

The Mood of American Youth. Based on a 1983 survey of American youth. The National Association of Secondary School Principals, 1904 Association Drive, Reston, VA 22091.

This national survey is a comprehensive study of the ideas, beliefs and aspirations of 1500 American high school students, mostly in public schools, in grades 7-12. In addition to exploring the current attitudes of adolescents about such topics as school, teachers, future plans, parents, fears, pastimes, religion and politics, this report also compares the attitudes of the 1980s "information age" young people with those of their "me generation" counterparts in 1974.

The report concludes that "The ever-challenging and critical posture of the early 1970s' youth has all but vanished...The 1980s' adolescents...possess definite opinions about their future careers (computer-related careers surpass all other occupations as the students' top job choice) [but] they also show a strong desire for traditional home and family life" and an "abiding respect for their parents."

Of particular interest is students' "uncharacteristically high degree of uniformity in [their] responses about...nuclear disaster and war - it appears that young people today very strongly believe and fear that some type of global violence is a real possibility within their lifetimes."

Other findings of special significance are that career success is the single most important goal that students want out of life; that unemployment, inflation and violent crime were ranked as the three top domestic issues; "more discussion" was the top-ranked suggestion for improving teaching methods; "learning" was ranked a distant third, behind "friends" and "sports" as a reason why students like school, even among "A" students.

Voter Options on Nuclear Arms p. 7. The Public Agenda Foundation in collaboration with The Center for Foreign Policy Development at Brown University. 1984. Paperback, 91 pp. \$6.00. The Public Agenda Foundation, 6 East 39th St., New York, NY 10016.

Although this national attitude survey was specifically prepared as a briefing book for the 1984 elections on the role of nuclear weapons in U. S. security, it can serve as an outstanding resource for classroom teaching of older students. Premised on the belief that "If there was ever an issue which called for democracy at its best, it is this," the book at once reports the results of its survey while clarifying what it considers to be the four basic options available for reducing the risk of nuclear war while maintaining national security. "...two courses of

action are open to us...One is to exclude the public; the other is to include them more. Exclusion is no longer practical. The public has involved itself — has in fact been 'invited in' increasingly by a concerned leadership."

The findings show equally a profound and heightened public concern about the dangers of a nuclear arms race (which the authors call the "most fateful issue of our time") and public attitudes that are "contradictory" or "seriously misinformed" about U.S. nuclear policy. For example, "virtually all Americans (81%) mistakenly believe it is our policy to use nuclear weapons 'if, and only if, the Soviets attack the United States first with nuclear weapons.'" The report also found that "Whatever way the questions were asked, the answers came back unequivocally: nuclear war is unwinnable, horrible, unsurvivable." This attitude "represents a massive shift in voter sentiment" from the early 1950s.

"The Doomsayers: Class politics and the nuclear freeze: the numbing polemics of Dr. Caldicott." Robert Coles. Boston Observer. November, 1984, vol 3., #11. \$1.50.

A renowned Harvard research psychiatrist, Coles begins this article with a nod to his "many friends in the freeze movement for their continuing moral witness, their necessary political activity" and the admission that he feels "discomfort" about the "candid" attack on their tactics and rhetoric, in general, and on Helen Caldicott, in particular, that he is about to unleash.

Coles' indictment centers on the class bias of the freeze movement -- specifically, as "an upper-middle-class crusade" -- that he argues patronizes and even insults the "ordinary, so-called working-class people" whom Coles regularly visits as part of his work.

Addressing those studies which claim that young people especially are affected emotionally and psychologically by the nuclear threat, Coles objects to their "findings" as "all-too-hasty survey research...with endless streams of social-science jargon." Coles asks,

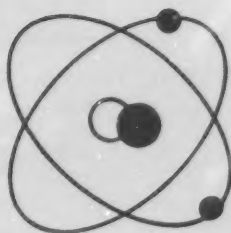
"Who has talked with how many of them [adolescents] for how long? The literature on children's fears of nuclear war is largely based on one-time questionnaires filled out in thirty minutes or an hour. But we are talking about fear, trying to measure its relative significance. It is important to know which children, from what family backgrounds, living where. Which fears? How significantly do those fears exert themselves? What, if any, are the everyday, practical consequences of those fears?... The research on this subject is not yet at all adequate, and I fear has been used in a thoroughly political way... In years of work with children and youth all over this country, I have not met in ghettos and in working-class neighborhoods, or even in many politically conservative homes in well-to-do neighborhoods, the children she

[Caldicott] and others have mentioned who are supposedly overwhelmed or preoccupied by fears of a nuclear war."

Many of the responses to Coles' charges focus as much, if not more, on his tone — "self-righteous," "destructive," "derogatory" — as on his content. Even those who share some of his views feel that he might have framed his critique in a more constructive way. As one letter writer put it, "We need you, we all need each other...these problems are...extremely difficult...We need all good minds and hearts working in concert. Could we join together?"

SECTION III

SUPPORT ARTICLES
FOR NUCLEAR EDUCATION



Why Nuclear Education?

Children are more frightened by the specter of nuclear holocaust than most adults realize.

TONY WAGNER

Most of us acknowledge, at some level, the possibility of a nuclear holocaust, but we try to push it out of our minds. In our work as educators, we numb ourselves to the contradiction of preparing students for a future that may not be. Yet the evidence is growing that children do not have this kind of defense mechanism.

Recent research projects by Roberta Snow, John Mack, William Beardslee, and others¹ suggest that children deeply fear nuclear war. In the May 1982 issue of *McCall's Magazine*, Mack summarized the implications of his research: "We may be raising a generation without hope, without promise of a future, cynical about the adult world and helpless to change it."²

A recent conversation with a fourth-grade boy made clear to me the nature of the problem to which Mack was referring. I asked this nine-year-old if he believed anything about nuclear "issues" should be taught in school. I did not mention the word "war."

"Yeah, for sure," he replied.

"What would you want to know?" I asked.

"I want to know what the danger of nuclear war is," he said. "And I want to know what would happen if there is a nuclear war."

Why do you want to know those things?

He turned away and mumbled, "You really don't want to hear my answer." When I assured him that I did, he stared at me and said, "So that when we all get blown up, I'll know why it happened."

How Students Feel

More and more frequently, teachers are finding that students want help dealing with these feelings. Younger children are asking questions about what nuclear bombs really do, or expressing their deepest fears about the end of the world through fantasy play. They crave reassurance from adults. Older students are not immune to these concerns and are sometimes heard to say such things as, "What's the use of learning this when we could all be blown away tomorrow?" Their repressed anger at the adult world sometimes flares up unexpectedly. They demand to be taught the facts about the nuclear arms race and the possible consequences of nuclear war. In the following letter, sent to the office of Educators for Social Responsibility (ESR), a 13-year-old girl from Evanston, Illinois, expressed her concern:

Dear ESR,

I am an eighth grader and I'm very scared about nuclear war. When I'm older I would like to be a psychiatrist or a pet store owner. But how can you expect kids to live normal lives when we could be blown up to smithereens in a minute?

My teachers say we cannot study about nuclear weapons or what to do because it is not part of American history or biology, math or English. Anyway, the principal decides what kids learn. I asked the principal and he said that I should ask my parents or learn about it in church. My mom thinks we should have a course in school because it affects us so much. But my father thinks teachers should not be interested in politics and I should learn more enjoyable subjects.

Tony Wagner is Executive Director, Educators for Social Responsibility, Cambridge, Massachusetts.

So do you have information that could teach me and my friends about nuclear war? My teachers might listen to you. But please help us quick. Next year we'll be in high school, and it's about time we got educated.

Sincerely,
Karen

Students are much more aware of the threat of nuclear war than we realize. The essential question now is, how do we respond?

What Educators Can Do

There are no easy answers, no nuclear education curricula that can simply be pulled off the shelf and taught tomorrow. We must begin trying to answer such questions as these: What nuclear issues should be taught in schools, when, and by whom? What materials and questions are appropriate for students of different ages? How do teachers deal with their own biases in presenting the issues? What kinds of support and special training do educators need to teach courses like *Decisionmaking in a Nuclear Age*,³ a curriculum primarily concerned with creating an informed democracy? How can teachers be given opportunities to develop new units about the history of nuclear weapons or the biological consequences of their use, to be included in required high school classes such as American history and science? Finally, what is the role of parents and school boards in educating themselves and helping decide what approaches to nuclear education are appropriate for their local communities?

Educators for Social Responsibility, a national organization of teachers, parents, and school administrators, is orga-

Nuclear War

nizing chapters around the country to actively explore possible answers to these questions. On October 25, 1982, ESR initiated a national Day of Dialogue to discuss students' concerns about nuclear war and to consider how educators and parents can respond. Programs were held in at least 500 schools on that day, and many more communities have organized their own local "day of dialogue" in 1983. These discussions have been aided by the ESR *Planning & Curriculum Resource Guide*.⁴ This book, written by 60 Boston area teachers and parents, helps educators consider ways of approaching issues related to nuclear war and peace education in the classroom, and identifies useful resources for developing curricula.

The issues related to nuclear education are very complex. A great deal more work needs to be done to find the best ways to teach about them, to develop new materials, and to research the effect of new curricula on students.

Those of us who have begun to grapple with these questions have already made several discoveries. One is that if we listen carefully to students and explore their questions and concerns without trying to impose a particular point of view, students respond with a great deal of openness and depth of feeling. They no longer feel alone and powerless in a solitary world of unshared fears. They are glad for the chance to talk, and they begin to find some basis for hope in the recognition that their concerns about the future are shared by others—adults as well as peers.

In taking action as adults, some of us have discovered another truth as well: we, too, begin to wake up, feel hope, and have a sense that we can make a difference. By working actively for a more caring and cooperative world, we transcend the awful contradiction of preparing students for a future that may never exist, and we begin to feel more whole ourselves. □

¹William Beardslee and John Mack, "The Impact on Children and Adolescents of Nuclear Developments," in *Psychosocial Aspects of Nuclear Developments, Task Force Report 20* (Washington, D.C.: American Psychiatric Association, December 1951).

²Natalie Gittelson, "The Fear That Haunts Our Children," *McCall's Magazine*, May 1982, p. 114.

³Roberta Snow, *Decisionmaking in a Nuclear Age*, 2nd ed. (Cambridge, Mass.: Educators for Social Responsibility, 1985). \$12.50 postpaid.

⁴*Planning & Curriculum Resource Guide* (Cambridge, Mass.: Educators for Social Responsibility, 1982). \$12 postpaid.

Membership in Educators for Social Responsibility is \$20 a year and includes a subscription to *ESR Newsletter*. To join or to order the publications mentioned in this article, write to ESR, 639 Massachusetts Avenue, Cambridge, MA 02139. Phone: (617) 492-1764.

ESR's current address is 23 Garden Street, Cambridge, MA 02138.

The *Planning and Curriculum Resource Guide* has been revised and is now available as *Dialogue: A Teaching Guide to Nuclear Issues*. In September 1983 ESR published *Perspectives: A Teaching Guide to Concepts of Peace*. These curricula are available at the cost of \$12.95 each, including shipping and handling.

The Schools *Must* Teach Nuclear-Weapons Issues

APRIL 13, 1983 • EDUCATION WEEK

By Ward Wilson

When Jefferson declared, "Preach, my dear sir, a crusade against ignorance . . ." in advocating the creation of public schools, he intended public education not only to civilize and cultivate those it touched, but to make them better citizens, better thinkers, more informed people.

There is a civic element to American public education that is essential to our democracy. Preparing citizens to think about public questions is part of the role public schools traditionally play. It is not enough that young people be able to add and subtract and write. They must be able to judge public issues as well.

Public schools have always taught the basic system of our government and some of that system's values. They have also taught—in history and social studies—the substance of our political debates. Recently, whole courses have been focused on important issues of current public concern: ecology, urban problems, poverty, and so on.

Nuclear-weapons issues are one of the greatest concerns of our time. If we fail to meet the dangers nuclear weapons pose, other problems will be erased or dwarfed by nuclear war. The issues of environmental debate, for example—clean air, clean water, wildlife preservation—pale when forced to compete with the issue of human survival after a nuclear war.

If nuclear-weapons issues are the most important public concern today, and I think they are, and if schools prepare citizens to understand and take part in the public debates of democracy, then nuclear-weapons issues *must* be taught in public schools.

"But how can such issues be taught in public schools?" people ask. "They are too controversial." The point is a valid one: Nuclear-weapons issues are a current topic of national debate on which no consensus exists. But this position is not really an argument against the importance of their being taught, it is an appeal to be excused from doing something difficult. However, I believe an unbiased, fair, and acceptable course is possible.

Another objection people raise is that nuclear-weapons issues are too frightening to teach to children. There are three responses to that. One is that if we don't teach them in high school we may never teach them. Nearly 70 percent of people over 24 have graduated from high school, but less than 20 percent have graduated from college. Another is that students are already exposed to quite a bit of information—much of it rumor and exaggeration. The psychologist John Mack of Harvard and others are discovering that children have heard a lot more about nuclear weapons and are a lot more affected by the information they receive than one would expect. In addition, protecting them from the fear doesn't protect them from the danger.



Finally, because teaching materials are scarce, people say, "This has strong bias. How can I get away, either in the classroom or in the community, with using biased materials?" Why not turn the tables on this disadvantage? Point out the bias and use it as an opportunity to bring in a speaker with contrasting views. Or ask a local group concerned about the bias to prepare materials for a week's worth of classes. By involving people outside the classroom, both the course and its support in the community will be strengthened.

The most important thing to remember when preparing to introduce or teach a course on nuclear-weapons issues is that *there are no right answers*. No consensus ex-

ists. In trying to understand why we should build these weapons, when—if ever—we should use them, how we could plan for a nuclear war, or how we as a country should act with this new responsibility, we have arrived at no certain answers.

As a result, a course on nuclear-weapons issues cannot simply present answers or values to be absorbed. The course would have to have the same purpose as a college seminar: Students would be introduced to the facts and the assertions that follow from them, but they would be left to draw their own conclusions.

The course would have to provide a jumping-off point for informed debate—a framework without answers. Such a framework would have two elements: the facts and the

honest. Who can pretend that he or she has the key to such profound and fundamental questions?

This course would not be easy to teach. The pitfalls are many and deep. For example, it is easy to dwell on the horrors of nuclear war. They are stunning, and once you begin to think about them, they grip the mind. But if a teacher teaches that no horror could be worse than nuclear war (at first, an appealing and apparently safe assertion), he or she has failed to teach the issues fairly. The idea presupposes a moral and political judgment. For if no horror could be worse than nuclear war, including a world controlled by a Communist dictatorship, then a certain balancing of human freedom versus suffering has been assumed. And there will be people who will argue, in Jefferson's words, that we should be "resolved to die free men, rather than to live slaves."

No sure-fire formula exists for avoiding mistakes in teaching or introducing a course on nuclear-weapons issues. There are no models of past courses, and because this is unknown territory, mistakes *will* be made. Count on it. But if teachers and school-board members will make a commitment to themselves to be fair—fair to all points of view, fair to all groups in the community—the course will be a success. If, on the other hand, they seek to press their own views, no matter how sincerely they believe in their superiority, the result will be in doubt.

There are important practical questions about a course on nuclear-weapons issues. At what level should it be taught? Since it will require analysis and debate rather than memorization and discussion, the later the better. Junior or senior year—11th or 12th grade—would be best.

Who would teach it? There are no experts at teaching this kind of course, since, with a handful of exceptions, it has never been taught before.

What is the best spot in the curriculum for a course on nuclear-weapons issues? The best way to introduce such a course into the

curriculum will vary from place to place. I think one very likely candidate is social-studies "topics" courses. Three of four currently important topics are usually covered during such a course and nuclear weapons could easily be made one of them.

What should the course cover? A course on nuclear-weapons issues should include three areas. First, it should discuss the scope of the problem, the physics of nuclear explosions, and what makes these weapons different. Trying to imagine what the effects of a nuclear war might be and looking at examples from Hiroshima and Nagasaki would be necessary for this.

Second, it should cover the history of the arms race—how people came to build, use, and rely on these weapons. (Attempts to control the arms race should be covered, too.) Many of the fundamental issues raised by the existence of nuclear weapons have been faced before. Most questions of whether to build new weapons, for example, are analogous to the debate over whether to build the hydrogen bomb.

And third, the course should cover current issues such as the use of tactical nuclear weapons in Europe and possible proliferation of nuclear weaponry. It should also include a discussion of the ethical problems raised by the use of these weapons. Ethical problems are hard to treat fairly. But on reflection, I think it is better to make a clumsy stab at this than to imply by omission that nuclear weapons raise no moral issues at all.

What course materials could be used? One of the main practical difficulties with teaching these issues is that no single comprehensive text is yet available. There is a plethora of "curriculum materials" available, but most were prepared by groups that have a specific point of view on the arms race and a particular solution to push, so care must be used in selecting materials. As far as I know, high-school materials that advocate increasing the nation's nuclear arsenal are not available.

Here is a sample of what is now available:

- Educators for Social Responsibility (E.S.R.) has published *A Day of Dialogue: Planning and Curriculum Resource Guide: Dealing with Issues of Nuclear War in the Classroom*. This is a guide to creating and

introducing a course on nuclear weapons in schools. E.S.R.'s position is that students must learn to formulate their own opinions on these issues. There is a strong focus on the dangers of nuclear war in E.S.R.'s materials.

- The Union of Concerned Scientists, in cooperation with the National Education Association, has just finished preparing a curriculum guide for junior-high-school (and up) teachers called *Choices: A Unit on Conflict and Nuclear War*. The 144-page unit stresses the continuum of conflict from individual to national disputes and relates conflict resolution to nuclear-war issues.

- Ground Zero, the organization that published the best-selling book *Nuclear War: What's In It for You?* has prepared a curriculum guide for secondary schools called *The Nuclear Age*. The 57-page guide outlines lectures that could be given, provides quotes and discussion topics, and includes graphs and charts. The guide could be used by someone familiar with the issue as the basis of a course.

- Finally, Roberta Snow, a board member of E.S.R. who is currently doing research at Harvard University on the effects of the threat of a nuclear war on children, has produced a book called *Decisionmaking in the Nuclear Age*, now in a second, expanded edition. This 3- to 12-week course for high-school-age students focuses on the process of making decisions about nuclear-weapons issues.

These curriculum materials are good. But they do not completely answer our need. What is needed more than a curriculum that teaches about a solution to the threats posed by nuclear weaponry—arms control or conflict resolution or strong defense or whatever—is one that examines the problems themselves as a prerequisite to understanding and deciding among the solutions.

Albert Einstein said, "Nuclear weapons have changed everything—except our way of thinking." It is time to begin the debates that will change our way of thinking.

Ward Wilson is a Washington, D. C., writer. He is at work on a book about nuclear-weapons issues for high-school students.

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EDUCATION
AND THE THREAT
OF NUCLEAR WAR

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A Decisionmaking Approach to Nuclear Education

ROBERTA SNOW, *Harvard University*

LISA GOODMAN, *Lawrence F. Schiff Day Treatment Center, Cambridge, Massachusetts*

This chronicle describes a senior high school curriculum that addresses four areas: personal values as a basis for political views, technological aspects of the nuclear arms race, the history of the nuclear arms race, and action for social change. Roberta Snow has played a key role in the development of the curriculum and has taught it many times. Here she joins with Lisa Goodman to provide a composite picture of the experience they and others across the country have had in using the curriculum.

Wrapped in complicated technical language and mysterious double meanings, the nuclear threat looms ever larger on the political horizon. Students are challenging teachers in classrooms across the country to confront issues concerning the arms race and the threat of nuclear war. Young people report that they feel immobilized by feelings of rage, cynicism, and despair provoked by their perceptions of a world out of control and without choices. They are rapidly losing faith in both the political process and the possibility of a secure future for themselves and their children.¹

Rather than ignoring these feelings, which are expressed most frequently by high school students, teachers involved in nuclear education are struggling to help young people regain their faith in the future and their sense of involvement in the political process. *Decision Making in a Nuclear Age* is one widely used high school curriculum to emerge from this effort by teachers.²

Decision Making is available through Educators for Social Responsibility, a national network of 6,000 educators committed to bringing nuclear education into schools and providing a forum in which teachers can explore the issues for themselves. The curriculum has been taught in a variety of high schools across this country and in Canada.³ Over a period of three years, forty-five classroom teachers have conducted pre- and post-test evaluations related to the curriculum. In addition, teachers across the country are incorporating the methods and materials into their courses. The ideas and methods in the curriculum are also disseminated in

¹ A variety of studies supports this notion. See Lisa Goodman, John Mack, William Beardslee, and Roberta Snow, "The Threat of Nuclear War and the Nuclear Arms Race: Adolescent Experience and Perceptions," *Political Psychology*, 4 (1983), 501-530; Beardslee and Mack, "The Impact on Children and Adolescents of Nuclear Developments," *Psychosocial Aspects of Nuclear Developments*, ed., Rita Rogers, Task Force Report No. 20 (American Psychiatric Assoc.: Washington, DC, 1982), pp. 64-93; Dorothy Offer, "Adolescent Self Image: Empirical Studies and Theoretical Implications," Paper presented at the Cambridge Hospital Symposium on Self-Esteem: Development and Substance, 10 Dec. 1982, Boston.

² Chris Austill, Benson Bowditch, Lucille Burt, Thomas Landenburg, Elizabeth Lewis, Connie Phillips, Martin Schatz, Roberta Snow, and Alan Stokopf, *Decision Making in a Nuclear Age* (Weston, MA: Halcyon House, 1983).

³ The curriculum has been taught in too many communities to list here, but a sample includes Santa Fe, NM, San Francisco, CA, Santa Rosa, CA, Grand Forks, ND, Albany, NY, Pittsburgh, PA, Philadelphia, PA, Atlanta, GA, and Boston, Cambridge, Weston, Needham, and Brookline, MA.

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the form of one- to five-day workshops conducted by the Education and Democracy in the Nuclear Age project, directed by Roberta Snow.⁴

Decision Making grew out of the Facing History and Ourselves project in Brookline, Massachusetts, a program devoted to the development and dissemination of a curriculum about the Holocaust. As students across the country reflected upon the lessons of World War II and the Armenian genocide, they began to demand information about contemporary political decisions whose implications could be even more devastating than the horrors they had been discussing.

The *Decision Making* curriculum is based upon its authors' experience as educators and as citizens; we believe that rational discourse in an educational context can provide structure for raw feelings and can form the foundations of active and responsible citizenship. When young people develop a cognitive perspective on any sensitive or polarizing issue, they can better channel their emotions in constructive ways. After taking the course, one tenth-grade student commented, "I used to get depressed thinking about all those mysterious words. They can't fool me anymore. I know what a MIRV is and I can have a say about it."⁵ We believe that when students are given the opportunity to confront the reality of the nuclear problem, they are helped to become active participants in search of solutions rather than remain passive and helpless observers.

Introducing nuclear education to adolescents is also critical because the arms race is one of the most important issues of our time. Educators commit a glaring omission when they discuss other current events while sidestepping the problem which in some sense shapes and determines the political response to all issues. We believe that students cannot be reflective and informed participants in the political process without knowledge of the nuclear problem. Addressing a group of Nobel Prize Laureates in 1983, Samuel Pisar, a Holocaust survivor, eloquently summarized the importance and timeliness of education on nuclear issues for both democracy and the world's well-being. "It is reassuring at this moment in time to remind ourselves of a long overlooked truth: The real strength and wealth of nations reside not in their military arsenals or material resources, but in the undiscovered and unused potential of their men and women, the intelligence, ingenuity, and inspiration that make them productive, prosperous and ultimately free."⁶

A study of the nuclear arms race serves yet another purpose. It lends itself to—indeed it demands—a methodology that forces students to consider conflicting viewpoints deeply and personally. Although all nuclear education involves learning about numbers, about the technological specifics of nuclear weapons, and about the events and personalities which have propelled the nuclear arms race since 1945, what is unique about the most effective nuclear education curricula is the context within which these subjects are raised. In the process of teaching the specifics of the nuclear arms race, educators must use teaching strategies which compel their students to acknowledge that informed men and women can reasonably come to antagonistic positions. Students must learn to understand and validate the view-

⁴ The Education and Democracy in a Nuclear Age project is part of the Nuclear Psychology Program at the Harvard Medical School. The Nuclear Psychology Program studies psychological issues in the nuclear age and is committed to research, public education, and the translation of research findings into public policy and informed opinion. Education and Democracy in a Nuclear Age concentrates on research and development of educational materials and conducts teacher education programs to help teachers and communities raise controversial issues related to nuclear education.

⁵ All student material has been taken from journals of students in Brookline, Cambridge, or Boston, MA.

⁶ Pisar, Opening Address, Conference of Nobel Prize Laureates: Science and Peace, Oct. 1983, Paris, p. 3.

points they have been accustomed to rejecting immediately. Only after understanding the views of others can young people develop their own truly informed opinions and then act on their convictions.

While it is true that good teaching involves the presentation of conflicting ideas to promote students' independent thinking, the nuclear material is particularly appropriate to this pedagogy. The issue is so potentially disturbing, subject to polarization, and nested in ideology that it must be presented in an extremely structured and open-minded manner. If not, propaganda and stereotypes become further entrenched. It is the multiperspective approach which prevents the course from becoming improperly partisan. Since the nuclear issue itself seems to provoke a sense of powerlessness and helplessness, it demands a pedagogy that helps students combat these feelings. The process of questioning, understanding, and developing one's own perspective on the spectrum of issues raised by the nuclear debate provides students with the opportunity to articulate and act on their concerns.

We turn now to an overview of the topics covered in the *Decision Making in a Nuclear Age* curriculum. Since no description of content can be separated from a description of the strategies used to present the material, we include here techniques which promote students' engagement in the issues raised. We will then elaborate on the methods of discussion, questioning, and journal writing used by the curriculum.

The first section of the curriculum is devoted to the clarification of personal values and their connection to political views. Many students come into the classroom holding rigidly to opinions that are without conscious foundations. This section asks them to consider the underlying beliefs and assumptions which shape their conclusions so that they can come to a deeper understanding of their own values. For example, they examine a variety of situations involving the use of violence in order, first, to determine what they believe might be a justifiable use of violence and, second, to explore the connections between this determination and their opinions on the nuclear debate. Would they use violence for self-defense? Defense of a family member? Defense of a worthwhile cause? Defense of a nation? These questions arise as students study, for example, excerpts from soldiers' journals, documentation of ritualized intertribal warfare in New Guinea, and magazine and newspaper editorials dealing with the issue of capital punishment.

The second section of the curriculum deals with the technological and scientific aspects of nuclear weapons and the past and potential effects of nuclear explosions. It would be impossible for all students to come to a complete understanding of the technical facts surrounding the building and deploying of these weapons. They can, however, learn the meanings of many of the technical terms and concepts used by the media and by experts so that they can approach presentations of the issues with more confidence. When students study the vocabulary of the nuclear debate—terms such as cruise missile, antiballistic missile, tactical weapons, fission, fusion, and so on—they also view slides and films of nuclear weapons so that they are better able to grasp the technical language.

One of the most provocative and potentially upsetting parts of the curriculum is the segment devoted to the effects of a nuclear explosion. Students may have powerful emotional responses when they see films of Hiroshima and Nagasaki survivors or read their testimonies and are suddenly confronted by human images of nuclear war. In the curriculum, we ask teachers to consider carefully the level of class cohesion and student maturity in determining how much of this vivid and personal material is appropriate to a particular group. We hope that those who undertake to teach the subject recognize the weightiness of the material and provide the support students need to vent their emotions without succumbing to despair.

The third and longest section of the curriculum explores the strategic and political history of the nuclear arms race. Of course, these subjects are too vast and complex to cover thoroughly in one course, and we encourage teachers to examine a few periods in detail rather than present a shallow overview of all. Several weeks could be devoted to an in-depth study of only one set of negotiations. For example, *Decision Making* includes many lesson plans on the Yalta conference. Students begin by reading primary sources which address the backgrounds, motives, and personalities of the world leaders who convened at Yalta. Once they are familiar with the issues to be resolved, students conduct their own mock negotiations. They divide into groups representing the United States, Great Britain, and the Soviet Union, and each group elects one person to act as the leader. This exercise helps them to experience the difficulties involved in negotiating a fair agreement. When they finish the negotiations and then learn of the actual historical outcome, they are able to appreciate more fully some parts of that agreement. Many also begin to confront the stereotypes they hold of other nations. This same process of in-depth examination can be applied to a variety of topics, including Truman's decision to drop an atom bomb on Hiroshima and the later decisions involved in creating a hydrogen bomb, in convicting Alger Hiss and the Rosenbergs, in negotiations such as START and SALT, and in the development of various military strategies such as Mutually Assured Destruction (MAD) or deterrence.

The final section of the curriculum addresses the subject of social change. This section is based on the premise that activism involves a way of living whereby one learns to examine and constantly question the status quo—personal and societal—and to take intelligent action necessary for the development of society. This complex, elusive, and sometimes overwhelming process is broached on a variety of levels. One set of lessons in this section focuses on the lives and writings of individuals and groups who have questioned their world and made changes. Students learn about U.S. heroes, such as Martin Luther King, Jr., and lesser known individuals, such as a high school student who succeeded in her fight to eliminate her high school's tracking system. They read about other students who have organized to save a park, to incorporate a youth advisory group into their city government, or even to install an extra bathroom in their school, and about neighborhoods which have organized to prevent rent hikes or the building of an unwanted parking lot. Finally, they look to their own friends and relatives to discover examples of people who have taken a stand. Many discussions center around what it means to be an involved citizen, what the students themselves envision for their own communities, the nation, and the world, and what steps they can take to fulfill these visions.

These materials were chosen because of their controversial nature, since the methodology we have developed—the heart of the curriculum—is designed to engage students in controversy. We have three goals. First, we hope to teach students to grasp the complexities of the nuclear debate by undertaking the emotional act of empathy for divergent opinions and the mental act of truly understanding the premises, values, and logic of an argument. Second, we wish to help students develop the skills necessary for critical analysis and judgment. Finally, we want students to accept the existence of ambiguities in the world but at the same time feel empowered to act on their questions and presently held beliefs rather than sit back, passive and paralyzed by their uncertainty. As Jonathan Schell writes: "Our knowledge will never be complete. To accept uncertainty is essential in facing the nuclear peril honestly, and to learn to make judgments, and to act on them, in the midst of uncertainty is the beginning of wisdom in dealing with the nuclear predicament."⁷

⁷ Schell, "Reflections: Nuclear Weapons," *New Yorker*, 9 Jan. 1984, p. 43.

Students beginning a nuclear education course have been bombarded by vigorously held opinions articulated at home, at school, or in the media. They are often wary of another one-sided presentation. One tenth-grader, just beginning a nuclear education course, commented: "I do think this course should be taught but I want to make sure the teacher doesn't have any strong feelings about it so he or she doesn't brainwash the kids into thinking like him or her. I want to make sure that for every speaker that is for it, they have one that is against it so the students make their own decisions on what to believe."

Decision Making, however, encourages students to embrace strong arguments rather than avoid them. One strategy we have devised is to introduce students to an argument by engaging them in "methodological belief," a term coined by Peter Elbow. According to Elbow, this teaching strategy rests on "the idea that the truth is often complex and that different people often catch different aspects of it; and that we get closer to seeing correctly by entering into each others' conflicting perceptions or formulations."⁸ The exercise we developed to explore Truman's decision to drop a nuclear bomb on Hiroshima illustrates one use of methodological belief in the curriculum. Students divide into three teams, each of which is assigned a specific task. Group A must gather data and articulate as many arguments as possible to support the position that, given the information available at the time, Truman and his colleagues were wise in deciding to use the atom bomb. Group B must gather data to support the position that, given the available information, Truman should not have dropped the bomb. Group C must do the same thing to support the position that Truman did not have enough information at his disposal to make such a weighty decision. This encourages students to make this more than an academic exercise; they are encouraged to become true advocates of their position. Following this exercise in one class, a member of group A, the group which supported Truman's decision, wrote:

Before I took the *Decision Making* course, I definitely thought the U.S. was sadistic to drop the bomb. Now I see how it happened. The people who decided to do it weren't bad. They were just under a lot of pressure. They had never seen the effects of an atomic bomb before. And besides, I bet the American soldiers were pretty relieved. If I was a soldier then, I guess I would have celebrated the day they dropped the bomb. And I wouldn't have thought Truman was being too sadistic. I wonder what we'd do now.

In attempting to empathize with Truman's position, this student did in fact gain new insights into the reasons for his actions.

Methodological belief is an effective tool in releasing the empathetic tendencies of young people. However, adolescents have an equally strong inclination to criticize, sometimes quickly and superficially. *Decision Making* can help students develop this tendency toward criticism in a constructive and thorough way. Rather than tear apart the opinions of various speakers and writers, students learn to reconstruct the life experiences and value systems that have led others to such conclusions. One teacher reflected upon her own use of this method: "I'm so used to critical thinking meaning finding ways to see what's wrong with the argument or view. It's been enlightening to learn that teaching students to think critically means helping them understand how people view the world and why they think the way they do."

⁸ Elbow, "Critical Thinking Is Not Enough," Reninger Lecture, Univ. of Northern Iowa, April 1983, p. 10.

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In one *Decision Making* class, a scientist came to talk about the Pentagon plan to deploy antiballistic defense systems in space. In the ensuing discussion, the teacher requested that the students ask questions only to further their own understanding of the speaker's premises. If a student asked a question which appeared argumentative rather than clarifying, the teacher would stop the discussion to inquire about the student's motivation in asking the question. She also stressed the importance of tone and body language in creating an atmosphere of inquiry rather than confrontation. The following two questions reflect two students' attempts to uncover the speaker's background, values, and the meaning he attached to defense weapons: "You used the term 'peace movement' a lot. Who is the peace movement to you?" "Did you always think that technology was the way to go? Were you different in your political thinking when you were our age?"

In dealing with the complexities of nuclear issues presented by the curriculum, a teacher must help students discover that they are not responsible for finding a full-scale solution to the nuclear problem. Most importantly, they must learn to live with the discomfort which comes with not having definitive answers, and to recognize that the asking of good questions is forward movement.

Students must choose whom and how much to believe, and how to incorporate various viewpoints into their own belief systems. They must ask questions such as: What is the source of information upon which this argument is based? How legitimate is the source? Is this argument based on established fact, speculation, or opinion? Is it based on logic and reason or preconceived judgments or prejudices? Are the values and goals at the foundation of this argument sound and/or compatible with mine? The following comments illustrate the kind of thinking students demonstrate during this process. One student responded to a speaker this way:

Hearing the woman from Fletcher's talk about the need for more arms was scary. Not because of what she said, but because of what a nice person she was. She doesn't fit my stereotype of a warmonger so it was hard to resist the information. I wanted to hate her but I really liked her. In fact, I liked her even better than the so-called peace movement people. It made me surrender my stereotype and realize that you have to listen carefully to the information and not get too involved with the personality. But so much of what we believe is who tells us or how they tell us. It's not really who to believe but what to believe!

Another student wrote:

It seems to me that behind the whole concept of national defense is that people should go to any extreme to protect themselves or their property. It's like putting explosives in your car that blow up automatically if someone tries to steal it. I guess I'd rather have my car stolen than take the chance of its accidentally blowing up. The way our military works now, defending is more valuable than preserving. I strongly disagree with this.

The process of questioning and then requestioning is best carried out cooperatively. For this reason, class discussions are a crucial part of the *Decision Making* course. Students come to class expecting to be informed only by the experts. Many feel both challenged and legitimated by the teacher's insistence that authentic learning must include interaction with conflicting perspectives and articulation of one's own views of the world. In the course of class discussions, teachers can encourage feedback that is constructive rather than combative. Students learn to disagree with each other while at the same time respecting each other's viewpoints.

When students feel that their opinions are respected, they begin to "own" them and to speak from their experience rather than make generalizations.

A key element of the *Decision Making* methodology is journal writing. Keeping journals provides another forum through which students can articulate their discomfort and can practice the process of questioning themselves and others. Journals also provide an opportunity for teacher and students to carry on a more confidential dialogue. Each day students record their insights, questions, and emotional responses to the previous class and to the process and progress of the course. To quote one teacher, "By keeping journals, students will, in effect, be bearing witness themselves to their own living history: responding to their own growth and change within the course."

Journals allow students to explore and express thoughts and feelings they may hesitate to share with the entire class. Written comments from the teacher can provide the support and acknowledgment young people often need to keep from feeling alone. As one student wrote, "The course is really intense. The journals are a great place to write your lowest feelings, no matter what they are." Journal writing is also a wonderful way for students to begin to incorporate their emotional and intellectual positions into the establishment of a viewpoint or judgment. Jonathan Schell writes, "Judgment does not rely on reason alone; it also summons into play intuition, emotion, experience, temperament—in a sense, our whole being."⁹

As students begin to formulate and articulate their own ideas, they must be encouraged to find ways to act on their convictions. Psychologist Sybille Escalona describes the sense of well-being which comes through involvement: "For adolescents, the experience of being roused to action can be strengthening and can give an important push to forward development. We have seen in many teenagers, instead of a sense of discouragement, a sense of purpose which makes the future seem exciting and important."¹⁰

In the curriculum, this education for action need not be relegated to the sphere of nuclear weapons alone. The teacher can model and request participation in other aspects of life. The classroom itself can be structured in such a way as to encourage student involvement in decisionmaking. Students will be better able to make deep commitments to participation in world issues when they experience and understand the meaning of social change on a more personal level. The following example illustrates how the classroom can provide golden opportunities for a teacher to help students formulate, and then act on, their considered judgments and feelings.

In a *Decision Making* course, a television film crew videotaped a forty-five minute class and then excerpted ninety seconds of the material to show on national television that night. Many of the students were upset by the show. They felt that they had been manipulated and unfairly portrayed. Later in the course, another film crew requested to videotape the class. Given their past experience, the students did not want the crew to come. With the teacher's encouragement, they finally decided to allow the filming of the class, but this time they reserved the right to select the segment they thought best represented the class. Several volunteered to go to the station that afternoon to edit the material with the film crew.

⁹ Schell, "Reflections," p. 67.

¹⁰ Escalona, "Children and the Threat of Nuclear War," in *Education for Peace: Focus on Mankind*, ed., George Henderson (Washington, DC: Association for Supervision and Curriculum Development, 1973), p. 160.

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This sense of empowerment was further demonstrated by a class of students who decided to communicate with Soviet youth. They sent messages asking the Soviet young people to join with them in preventing nuclear war. One student stated:

We're the young generation today, and we're the ones that can make a difference tomorrow, and if it's peace we want, then why can't we have it? We have been building up walls—our countries, our governments, everything. We can stop this stupidity that the countries are doing, and we will because we are the future. We should talk to each other and see if peace can come. I want to say one more thing. We have not been paid to do this. It's not our government that told us to do this. All the feeling that you heard on this tape came from our hearts.

Other examples of projects have included television appearances in which students discuss their feelings about the arms race, school assemblies in which class members address issues concerning the student body, involvement in student government, participation in local and national elections, and writing opinion articles for publication. It is our hope that when students feel successful at contributing to change in a specific and personal sphere, they will uncover their own capability to act in many worlds.

Adolescence is a time when young people are searching for better ways to live. Robert J. Lifton eloquently sums up the thirst for change: "Youth confronts us with the simple truth too often ignored by psychologists and historians alike, that every individual life is bound up with the whole of human history. . . . For those in their late teens and early twenties find themselves entering, sometimes with the explosive enthusiasm of new arrivals, into the realm of historical ideas. And they bring to this realm their special urge toward development and change."¹¹

We are often asked how we can argue for nuclear education when little is actually known about how teaching might affect the realities of the nuclear problem. We do not, indeed we cannot, know how this or any nuclear education curriculum will affect the political realities of the nuclear arms race. But we do believe that it is no longer desirable, or even possible, to ignore the existence of nuclear weapons. Perhaps by providing students with information crucial to their development as citizens, the *Decision Making* model can channel the healthy skepticism and energies of adolescents toward experiences of constructive social change. Education should aim to provide students with a sense that history is not inevitable and that what this country is and becomes is our choice as citizens. Nuclear education can be especially conducive to achieving this goal. One student's comment reflects the surge of power shared by many as they move from learning the history of the arms race to becoming active agents of history. He wrote, "I never used to think about current events much, and here I am making them." To promote this feeling among students is the major aim of our work.

¹¹ Lifton, "Emergent Youth: The Japanese Example," in his *History and Human Survival* (New York: Random House, 1961), p. 28.



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NUCLEAR WAR: *A Teaching Guide*

Edited by Dick Ringler

The *Bulletin* has always sought to increase public awareness of the questions surrounding nuclear weapons. The publication of this teaching guide, which for the first time draws together into one place a wide array of information and resources, constitutes a significant contribution to that educational effort. The guide is intended as a basic primer for college and university teachers and as a practical resource for generating courses about nuclear issues. It suggests how topics already being touched upon in diverse classes on most campuses can be pulled together to form courses and also how courses on a single campus—or on adjacent or affiliated ones—can be pooled to form programs.

This supplement grew out of discussions between James Cracraft, the *Bulletin's* former senior editor and a professor of history at the University of Illinois at Chicago, and Dick Ringler, a faculty member at the University of Wisconsin. The solicitation and coordination of the articles then was done by Ringler. We are very grateful to both of them for their concern and their endeavors to make this material available.—The Editors.

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Higher education and the nuclear crisis

by Theodore M. Hesburgh

AT FIRST GLANCE, one might see little connection between higher education and the nuclear threat to humanity. In a forthcoming book on the moral dimension of higher education, I have written a chapter on universities and the nuclear threat. I believe that no university concern is more pressing or more important than this one, none more integral to a university education today.

Universities are dedicated mainly to improving the life of the mind, the intellectual and professional development of upcoming generations. This purpose, however, does not stand alone, because knowledge and intelligence must also be accompanied by moral values and ethical judgments. Most educators like to compress the intellectual and moral goals of education into a single purpose: to prepare young people for a good and productive life, both for themselves and for the societies in which they will live.

This generation of students is the first in the long history of humankind and of education that must face a world that may be utterly destroyed and where survival is a constant and nagging concern. All the good aspects of life that we

teach them about may well be obliterated by one catastrophic evil: nuclear holocaust. Can we possibly fail to inform them in the course of their education that this is not only a remote possibility but, if we believe the reading of the *Bulletin's* clock, a real probability? Not only are there more than 50,000 nuclear warheads in existence, but many thousands of them are attached to delivery systems—on the ground, in the air and under the sea—poised, targeted and hair-triggered for delivery, either by purpose or by accident. They are, for the most part, aimed at the Soviet Union and the United States, but if a significant number of them fly, this entire world for which we prepare our students could well be returned to the Stone Age or worse.

Our university students should be given a clear, precise and scientifically accurate picture of what faces them today, what will happen *if*, and what intellectual, moral and political options they have if their generation is to emerge safely from this corner into which we have painted humanity. The situation is desperate, but not hopeless. Students must be led to understand it and to act while there is time. They need not drift or lose hope. Is there anything more important that they should learn from us today? □

War, peace and liberal education

by Adele Simmons

NO QUESTION is more important to all of us than that of safely resolving conflict in our complex and interdependent world. With the fate of the earth itself at stake, the inclusion in our curriculums of courses and readings relating to peace and international security is not only timely but crucial. If tomorrow's citizens ignore or shrink from examining this issue, all else we teach may well go up in smoke.

When I first called for curricular innovation along these lines, my proposal met with considerable criticism: Undergraduates could not master such a complex subject; faculty who were not products of graduate programs in arms control could not teach in the field; the issues are in the hands of experts and should be left there. In two years, these attitudes have changed radically. At hundreds of colleges and universities students and faculty in virtually every discipline have begun to redesign programs and develop sources that enhance their understanding of the arms race. They have joined in an urgent search for solutions.

The subject of peace and war in today's world lends itself

perfectly to the purposes of liberal education. Students who seek to form their own conclusions about international security policies must first understand the facts that are shared by the Pentagon and the Union of Concerned Scientists alike. For example, they need to understand why these two groups take such different stands on anti-satellite missiles. Generally students need to develop intellectual tools to analyze and think about increasingly complex problems. Such tools will serve them well as citizens, whether the issue of the future is the arms race, civil liberties or the preservation of the environment.

The task of teaching students to think about these complex problems represents a considerable challenge to most of our educational institutions. At too many of our colleges and universities the departmental structure has isolated scholars, effectively cutting off dialogue among faculties of different disciplines and depriving students of the opportunity to see how people from different disciplines approach the same problem. The study of peace and international security encourages a broad interdisciplinary approach.

The leadership for establishing such programs—and for ensuring their quality—must come from an alliance of students, faculty and administrators. While courses will not

work without the involvement of faculty and students, deans and presidents should do much to facilitate their establishment. Money must be found for faculty development in this field, and rewards for faculty who participate in interdisciplinary programs should be clearly identified—and honored. The establishment of programs such as those

described in this guide need not be costly, but the undertaking requires unequivocal commitment. It is the combined responsibility of faculty, deans and presidents to place the issues of war and peace squarely at the center of the academic institution, now. In this nuclear age we do not have time to wait. □

Toward the practice of nuclear-age education

by Dick Ringle

IN APPROACHING the practical challenges of appropriate nuclear-age education in colleges and universities, it is well to listen once again to Albert Einstein's famous words about the radically changed context of our lives today and the radically new behavior which that context demands: "The unleashed power of the atom has changed everything except our way of thinking. Thus we are drifting toward unparalleled catastrophe. We shall require a substantially new manner of thinking if mankind is to survive." Here, Einstein firmly and clearly lays down the ultimate parameters of the educational problem. And yet, what sort of courses could we ever possibly devise to identify and implement a solution?

Douglas Sloane of Teachers College, Columbia University, has wrestled with this question and has drawn an illuminating distinction. In the first place, he points out,

Events are moving quickly, and the looming threat of destruction requires action so immediate that we cannot wait upon a fundamental transformation of human nature and thinking to deal with them. At the same time, however, the potential for nuclear war is now with us, humanly speaking, forever. The knowledge of the bomb is available and can never be put back in the bottle. . . . So education faces a dual task: a short-term one of marshaling all available forces to turn the present situation around, and a long-range, permanent task of forming those structures of consciousness and of society that alone can make possible a just and sustainable peace. Both tasks are necessary and must be carried out simultaneously: the first making breathing room for the second, and the second more and more informing and strengthening the first. The difficulties in such a tension-filled undertaking are manifold; the necessity for it is inescapable.¹

The next question, of course, has to do with the role that colleges and universities should play in carrying out these two tasks. And the first part of the answer is certainly as follows: They must come to understand that their responsibility is enormous and unblinkable and that it demands

a commensurate commitment in both the short and the long term. Richard Lyman, former president of Stanford University, said recently: "Almost the worst thing the universities could do would be to opt for a few easy and dramatic gestures, satisfying outlets for our frustrations that might make us all feel a nice warm glow of self-righteousness, but would do nothing to advance our basic understanding of the problem."²

In practice, this means two things:

- Individual educators must commit themselves to long-term efforts, retraining themselves as necessary and redefining their career and research goals in the interest of the general welfare.

- They must make a strenuous attempt to institutionalize these efforts. Too many courses are presently eased into curriculums as experimental or one-time-only offerings or are taught as faculty overloads. Too many programs flourish for a year or two, fueled by extraordinary energy and dedication, and then burn out or wash away. Such spasmodic, ad hoc initiatives are obviously not going to help much in accomplishing either of the two tasks identified by Sloane.

Assigning new priorities to either personal or institutional goals is not easy. Furthermore, the institutionalization of long-term effort presupposes either a reallocation of present funds, acquisition of additional funds or a combination of both. Nor is this easy: Bringing about such changes usually requires a descent from the ivory tower into the time-consuming and often frustrating world of institutional politics and fundraising. But there usually is no alternative.³

IT BEHOOVES all practitioners of the various arts and sciences to seek ways to mobilize their resources to study nuclear war. Not one of them is irrelevant. John Ernest has written: "I cannot imagine a discipline which does not have the potential of contributing to international cooperation and communication, or to a deeper understanding of the social, economic, political, cultural, historical, and psychological roots of our current predicament."⁴

Among many educators the conviction is growing that they have an overriding moral and intellectual obligation to teach about this subject and that the only question is

finding appropriate ways to do so.⁵ In practice, at present, this usually means figuring out how to pour the new wine of "nuclear-age education" (or whatever one chooses to call it) into old institutional bottles that are ill-shaped to receive it.

"The problem," Adele Simmons has said, is "the way in which most academic institutions are organized intellectually." And Peter Stein of Cornell University has amplified this point:

In universities, knowledge is defined by departments, journals, professional societies and conferences. The competence and training of the faculty rarely transcend these boundaries. Resources are allocated within the boundaries, and professional advancement depends, in the vast majority of cases, on performance whose evaluation assumes the validity of this framework. Nuclear war education, despite its acknowledged importance, does not fit well into these subdivisions.⁶

All this is naturally to be approached as a challenge, not as a fatal or final inhibition.

Out-and-out administrative opposition is difficult to surmount, of course. Often the best one can do is calmly and gently persist, biding one's time while networking with supportive colleagues and enlisting their aid. Other colleagues—the ones who are apathetic or simply somnolent—must be left to rouse themselves in their own good time. Sometimes they can be nudged, even prodded; but often it is less than useful to try to do so. Academics are no less susceptible than other people to what Robert Jay Lifton has called "psychic numbing": the supposedly self-protective disinclination, either conscious and wilful or subconscious and automatic, to dwell on this distressing and anxiety-producing subject.⁷

Finally, it is important to remember that where there's a will, there's usually a way. What is really remarkable and heartening today is the ingenuity shown by many educators in navigating the troublesome waters of disciplinary, institutional and collegial constraint, and in successfully delivering their cargo to port. This ingenuity is well-documented in many of the articles which follow. □

1. "Toward an Education for a Living World," *Teachers College Record*, 84, no. 1 (*Education for Peace and Disarmament: Toward a Living World*) (Fall 1982), p. 5.

2. Quoted by James Reston, "Protest or Debate," *New York Times*, April 18, 1982.

3. No general advice on the subject of fundraising will suit a myriad of different institutional contexts, but three things are worth pointing out: First, foundation funding is now in theory more easily available for nuclear-education projects than formerly. See Kathleen Teltsch, "Philanthropies Focus Concern on Arms Race," *New York Times*, March 25, 1984; and David A. Hamburg, "The Context for Carnegie Corporation's New Grant Programs," reprinted from the 1983 Annual Report, Carnegie Corporation of New York, 437 Madison Avenue, New York, New York 10022, pp. 5–10. Second, this has been confirmed in practice by a number of success stories. Both the MIT/Harvard Workshop on Nuclear Weapons and Arms Control and its counterpart at the University of California are funded in full by the Sloan Foundation. And this past spring the Ford Foundation, in an effort "to stimulate new approaches to peace and security in the nuclear age," announced "a major series of grants totaling \$3.7 million for research and training at sixteen universities and research institutions" in this country and abroad. These grants "will support research on such topics as the ethics of nuclear weapons policies, the psychological

*"Teachers are more than any other class
the guardians of civilization."
—Bertrand Russell*

bases of the Soviet-American conflict, the future of U.N. peacekeeping operations, and strains in the NATO and Warsaw Pact alliances." And finally, there is an annotated list of over 70 likely sources of substantial extramural aid in Barbara Wien, ed., *Peace and World Order Studies: A Curriculum Guide* (New York: World Policy Institute, 1984).

4. John Ernest, "A Call to the Conscience of the University Community," *The Center Magazine* (January/February 1982), p. 7.

5. See Robert Ehrlich, "We Must Teach About Nuclear War—and How to Avoid It," *Chronicle of Higher Education* (May 5, 1982), p. 23; William J. Rewak, S.J., "Universities Must Not Remain Neutral in the Moral Crisis over Nuclear Arms," *Chronicle of Higher Education* (Feb. 16, 1983), p. 64; Adele Smith Simmons, "Colleges Must Speak Out on War and Peace," *Chronicle of Higher Education* (June 23, 1983), p. 48; Dick Ringler, "Nuclear War Education: Teaching the Most Important Academic Subject," *Academe: Bulletin of the American Association of University Professors* (November/December 1983), pp. 11–15; and Sam K. Williams, "Academe Must Not Ignore the Nuclear Issue," *Chronicle of Higher Education* (April 4, 1984), p. 34.

6. Letter to College Faculty and Administrators Concerned with Curriculum Development. This letter is part of the UCAM packet, *Nuclear War: The Responsibility of the University*.

7. See Henry T. Nash, "Thinking about Thinking about the Unthinkable," *Bulletin* (October 1983), pp. 39–42; see also the replies in the *Bulletin* (Feb. 1984), pp. 51–56.

Introduction

by Dick Ringler

IN CONCEPTUALIZING and designing courses, one must obviously take into account the intellectual and political climate of one's institution and its potential resources. At some institutions, new courses within departments will be indicated; at others, multi- or interdisciplinary courses may be easier to install; in still others, infusing consideration of nuclear issues into existing courses may be desirable.

Furthermore, a teacher's own limitations of expertise and deficiencies of training may be overcome in at least four ways:

- by inviting colleagues with the relevant specialties to appear as guest lecturers, or by designing a course which consists mainly of guest experts;
- by framing a course as a collaborative investigation, on the part of teacher and students alike, of an area in which neither are expert;
- by using reading assignments to provide primary in-

struction about subjects in which the teachers is not particularly knowledgeable; and

- by embarking upon a program of self-education, either privately or by organizing and participating with colleagues in a faculty seminar or by attending one of the two-week summer programs for faculty development that are now available on both the east and west coasts.

An adequate range of study materials for most kinds of nuclear-war courses is now available, including excellent comprehensive textbooks and readers. The same is true of audiovisual materials, which are now available in rich abundance and which have an important contribution to make to most courses on this subject.

In designing new courses or infusing nuclear issues into existing courses, several things are probably a matter of consensus from the beginning. Most of us would no doubt

"To be a teacher is to have great responsibility. The teacher helps shape and give direction to the lives of other human beings. . . . Children and young people are our greatest treasure; when we think of them we think of the future of the world. Then consider the significance of nurturing their minds, of helping form their outlook on the world, of training and preparing them for the work that they will do."
—Pablo Casals

agree that raising the awareness of our students, that is, focusing their attention on the problem, is one of our fundamental tasks. Another is imparting basic information. Most of us would no doubt also agree that the aim of educators should be to complicate students' thinking, not to simplify it; to educate, not indoctrinate; to suggest dimensions, pose problems, and clarify multiple viewpoints and conflicting values, not to endorse partisan solutions. Alvin M. Saperstein writes with satisfaction of his interdisciplinary course at Wayne State University: "The faculty was knowledgeable and concerned, authoritative with the facts but not with the policy conclusions."¹ Some may not like it, but that is how it has to be. It is not our right to impose our own understanding of issues on students, nor to attempt to predetermine their actions; understanding and decision-making are private. The most we can do is to lay the groundwork for understanding and make clear the imperative need for decision and action.

Another general consideration in designing courses about nuclear war and peace issues is the necessity of always bear-

ing in mind the possibility that a new subject matter may imply a new pedagogy and that the information encoded in class structures and procedures may be at least as influential on students as the factual information presented in a course. The traditional lecture format, for example—the "expert" actively dispensing wisdom from the platform, the "inexpert" passively absorbing it below—perhaps merits reconsideration. And grading may also present problems. Is there not usually some tension between the awareness-raising aim of nuclear courses and the traditional need to evaluate student performance? Last but not least: what model of critical thinking about controversial issues should we provide—that of ideological opposition and adversarial debate or that of ideological empathy and cooperative dialogue? In brief, perhaps we ought to give more thought to designing courses that furnish a model of the "new manner of thinking" urged upon us by Einstein. This is a serious challenge, of course, and a great opportunity.

It remains to address the process of introducing consideration of nuclear issues into courses about other subjects already in the curriculum. An example of a large-scale and far-reaching initiative of this kind is the week-long Summer Institute on Global Studies which was held at Augsburg College in Minneapolis in June 1984, under the auspices of the Division of College and University Services of the American Lutheran Church and the Department of Higher Education of the Lutheran Church in America. At this institute, representatives from a large number of Lutheran colleges and universities nationwide met in seminars that were "intended to assist faculty members [to] integrate consideration of peace and justice issues within traditional courses in various disciplines without violating either the content or the methodology of the disciplines." The 1984 institute offered seminars in religion, education, English, biology, economics and political science. A follow-up institute, to be held at Gettysburg College in the summer of 1985, will offer seminars for teachers in other disciplines.²

Infusion is a technique available to any teacher at any institution. Good judgment is necessary, of course, and care must always be taken to ensure that the interjection of these issues into "traditional courses in various disciplines" really is accomplished "without violating either the content or the methodology of the discipline." Hence it is of the utmost importance to identify the works, topics or areas of interest within a given discipline that furnish legitimate points of entry into the nuclear question. One purpose of the series of articles which follows is to help teachers identify some of the points of entry they can take advantage of in their efforts to integrate nuclear considerations into current courses. □

1. Alvin M. Saperstein "Nuclear War: An Interdisciplinary Course," *Journal of College Science Teaching* (March/April 1983), p. 321.

2. These educational efforts are part of the American Lutheran Church's efforts to implement the "Mandate for Peacemaking" adopted by its Eleventh General Convention on September 10, 1982. For further information about the mandate or the plans for educational implementation contact Naomi Linnell, DCUS, ALC, 422 South Fifth Street, Minneapolis, Minnesota 55415.

Physical sciences, mathematics and engineering

by Lester G. Paldy

PHYSICAL SCIENTISTS can often respond in detail to the enormous student interest in the technical dimensions of nuclear war. Some potential effects of a large-scale nuclear war are not understood, but much is reasonably well-known and documented in the open literature. This information should be part of the knowledge possessed by persons who wish to understand and participate in the current national debate over the utility of nuclear arms. Courses in the physical sciences, mathematics and engineering can contribute to student understanding by treating fundamental physical processes, as well as specific scientific and engineering applications related to the design of nuclear weapons and their effects. Such courses can also help students to follow political issues concerning our nation's strategic defense posture which are often examined in social science courses.

The boundaries between areas of possible study are not always well defined. Nuclear weapons were (and are) developed by a multidisciplinary group of scientists and engineers, and thus we should not be surprised that technical issues related to nuclear war do not fall neatly into any single course category. These topics are often sensitive and have political implications which some view as incompatible with the traditions of "objective" scientific and engineering inquiry (a notion that itself is subject to debate, since, as many are quick to point out, our traditions contain much that is not objective). Yet it is essential that all citizens understand as much as they can of what is known and appreciate what is unknown about the scientific and technological aspects of nuclear weapons, nuclear war, arms control and the strategic doctrines that specify the conditions under which the weapons might be used.

Some departments may elect to offer complete courses devoted to the application of their science to nuclear war issues. These courses may be of particular interest to non-scientists if they can be used to satisfy a distribution or general education requirement. However, such courses will probably not attract large numbers of science and engineering students, whose schedules are already crowded with required subjects that must be taken in tight sequence. Since many of the latter will be employed in defense research and development, it is essential that they be given an opportunity to understand the scientific and technical dimensions of the issue. One way to do this is to include in traditional courses some of the topics listed in the box accompanying this article. The topics can be treated at various levels,

depending on the background of students. Much of the necessary science and engineering background can be learned by science and engineering faculty. Guest speakers can also address specific topics.

Relatively few graduate courses in the sciences examine the nuclear issue in any detail. The same constraints that limit the participation of undergraduate science and engineering majors apply here even more intensely. Again, this problem may be overcome by including examples of specific nuclear applications in traditional courses, and seminars on advanced topics can be held at various intervals to stimulate thought and interest among the graduate student population.

SEVERAL COURSES sponsored by physical science departments can serve as models for others considering how to proceed:

- Dietrich Schroer (Department of Physics, University of North Carolina, Chapel Hill, North Carolina 27514) offers a physics course for general audiences called "Science, Technology and the Arms Race."

- Robert Ehrlich (Department of Physics, George Mason University, Fairfax, Virginia 22030) coordinates an interdisciplinary course called "Nuclear War," with contributions from other faculty. His course features distinguished guest speakers.

- Avrom Blumberg (Department of Chemistry, DePaul University, Chicago, Illinois 60614) teaches an upper-division course, "Problems in Modern Warfare, Arms Control and Disarmament," that examines many scientific and technological issues associated with nuclear war.

- Alvin Saperstein (Department of Physics, Wayne State University, Detroit, Michigan 48202) teaches a course called "Nuclear War" for general students, who can register for credit in any one of four departments: physics, history, political science or peace and conflict studies.

These courses are described in more detail in the March/April 1983 issue of the *Journal of College Science Teaching* which focused on the theme of nuclear education. Persons interested in receiving syllabuses for the above courses or for "Science, Technology, and Arms Control," which I teach to upper-division undergraduates at the State University of New York at Stony Brook, should write to request them.

Extensive sets of sample course syllabuses can be obtained from the Federation of American Scientists.

"Your Career and Nuclear Weapons" is a short guide for young scientists and engineers to the nuclear arms race, the role their fields play in it and how it may affect their work.

Prepared by a group of post-doctoral research scientists, it is directed to college and engineering students and is intended to raise their awareness about the nuclear arms race and the special role their disciplines have in the research for and development of new weapons systems. Since 65 percent of the federal research and development budget is devoted to military research, a large fraction of job opportunities lies in this area. The guide gives a brief history of the nuclear arms race, discusses new developments and

analyzes military programs in industry and universities. For copies, please contact: Neil Turok, Department of Physics, University of California, Santa Barbara, California 98106, or Robert Brandenberger, Institute for Theoretical Physics, University of California, Santa Barbara, California 93106.

High Technology Professionals for Peace, 639 Massachusetts Ave., Room 316, Cambridge, Massachusetts 02139 publishes *Are You Considering a Career in the Defense Industry? Some Questions You Should Ask.* □

The following topics may already be examined in existing physical science, engineering or mathematics courses. A complete physical science course dealing with nuclear war can be assembled with contributions as outlined below. The precise mix of topics can vary, but there are more than enough to construct a year-long course.

Physics

Scaling principles; properties of simple functions; "back of the envelope" approximation techniques.

Classical mechanics needed for a descriptive understanding of basic concepts such as force, energy, pressure, heat and temperature.

Electromagnetic spectrum; x-rays; visible light; radar.

Introduction to principles of geometric and wave optics.

Introduction to nuclear physics with special emphasis on the physical significance of binding energy.

Physics of fission and fusion processes.

Dynamics of missile flight and satellite motion.

Physics of isotope separation processes.

Introduction to laser physics and quantum optics.

Introduction to the physics of particle beams and beam weapons.

Physical effects of nuclear weapons.

History of physics bearing on events leading to the development of nuclear weapons.

Mathematics

Military applications of probability and statistics.

Introduction to operations analysis.

Mathematics of encryption processes.

Earth sciences

Effects of nuclear explosions on the environment, with special attention to the atmosphere.

Seismographic detection and yield estimation of underground nuclear explosions.

Earth satellite dynamics.

Satellite photography and related techniques used for verification.

Advances in the ocean sciences and their application to antisubmarine warfare; use of the ocean and sea floor for military purposes.

Military applications in space and their implications.

Engineering

Design of nuclear reactors.

Nuclear fuel cycles.

Nuclear safeguard systems.

Design of nuclear weapons.

Conduct of nuclear weapons tests.

Design of antiballistic missile systems.

Organization of the defense industry research and development system.

Organization of federal support for defense research and development.

Applications of high technology for defense.

Computer applications for military purposes.

Organization and design of command, control and communication systems.

Employment and career patterns of persons employed in the defense industry.

Industrial engineering and economic conversion.

Issues associated with international technology transfer.

Chemistry

Fundamental principles of nuclear chemistry needed for a descriptive understanding of important applications.

Principles of isotope separation.

Uranium milling and refining processes.

Plutonium and uranium reprocessing chemistry.

Uranium enrichment processes (diffusion, centrifuge and laser).

Chemistry of radioactive waste handling.

Conventional explosive processes.

Biochemistry of heavy metals.

Biochemistry of radiation effects on humans.

History of chemistry bearing on applications of chemistry for military purposes, including the development of gases for warfare.

All Science Courses

Issues of freedom of scientific information and communication.

Science and human rights issues.

Perspectives on science, ethics and human values.

Biological and ecological sciences

by Herbert D. Grover

TWO APPROACHES may be taken by courses dealing with the biological effects of nuclear weapons and nuclear war. The first is to deal with them primarily in human terms, that is, with the medical effects. The second, which is broader and may include the kind of information dealt with in the first, treats the consequences of nuclear war for *all* biota and might more appropriately be referred to as instruction in the ecological consequences of nuclear war. The discussion that follows identifies some of the topics that would naturally be taken up in both kinds of courses.

Information on the medical consequences of nuclear war is readily available through Physicians for Social Responsibility (PSR) and International Physicians for the Prevention of Nuclear War (IPPNW). In fact, PSR has conducted studies which outline the immediate and short-term effects of nuclear detonations for most major U.S. cities. This kind of information has been used extensively in the continuing debate about civil preparedness and in informing the public about the scale of devastation caused by nuclear weapons.

Although looking at the consequences of nuclear war from an anthropocentric viewpoint makes good common sense, recent discoveries about the intermediate and long-term atmospheric effects of nuclear war suggest the need for a much broader perspective. Atmospheric scientists have revealed—through the use of mathematical simulation models—that the smoke and dust lofted into the atmosphere by multiple nuclear weapon detonations could block out sunlight and reduce land surface temperatures by tens of degrees centigrade.¹ In addition, nitrous oxides generated by the fireballs could result in severely reduced stratospheric ozone levels, permitting biologically harmful ultraviolet light to reach the Earth's surface. These effects have become known collectively as "nuclear winter."

Assessment of the ecological consequences of nuclear war requires first that the initial effects of multiple nuclear weapon explosions on biota be identified and quantified. Such calculations provide the groundwork for further analysis of changes in the intermediate and long-term postwar period. Secondly, the direction and severity of change in abiotic variables, for example, sunlight intensity, surface temperatures, ultraviolet transmittance through the atmosphere, must be established. This information permits an analysis of which species might incur lethal, sub-lethal or non-lethal effects, with particular emphasis on human susceptibilities. Finally, in the context of this analysis, changes in the character and degree of human reliance on natural ecosystems for food and shelter must be considered. Increased human exploitation of natural ecosystems, them-

selves severely affected by nuclear war, may in turn greatly alter the rate and pattern of successional recovery.²

The nuclear winter findings also strongly suggest that the climatic effects of nuclear war will not be restricted to those nations directly involved in the postulated conflict, or even to the latitudinal regions of the war; a nuclear war of only very moderate magnitude in the Northern Hemisphere might have severe impacts on climate in equatorial and southern latitudes as well. Thus, avoidance of nuclear conflict has now become more of an international concern than it ever was in the past.

I am aware of only two courses which deal specifically with the ecological consequences of nuclear war: "The Ecological Consequences of Nuclear War," taught by Mark Harwell at Cornell University, and "Nuclear War: Principles, Dimensions and Prospects," which I teach at the University of New Mexico. Both courses deal with three major topics:

- the principles of nuclear weaponry;
- the dimensions of the issue, that is, how many weapons are in the world's arsenals and what their combined effects would be; and
- the long-term prospects for survival and recovery of humans, managed ecosystems, societal structure and the ecosystems of which these form components.

In both courses, great care is taken to present factual information in an objective manner, and no attempt is made to advocate any particular political stance or course of action. In fact, in my course I invite guest speakers from both the "peace community" and Sandia National Laboratories. This balanced approach provides students with a well-rounded view not only of the technical issues but also of the economic, political and moral aspects of the nuclear arms debate.

Evaluating student achievement in courses such as these presents very special problems. When great emphasis is placed on the technical aspects of the issue, there is a tendency either to be overwhelmed by the immense scale of the effects or simply to reduce the issue to numbers and statistics. To mitigate these tendencies, Harwell and I require that students prepare research papers on a topic agreed upon in consultation. Both of us require that the papers be written in two stages: the first an outline for discussion and critique by the class, then a final draft which incorporates points brought out by the instructor and classmates. This often proves a cumbersome and very time-consuming approach, but requiring students to think through their papers twice gives them additional opportunity to consider the importance of their topic, thus minimizing the tendency to get buried in numbers and allowing them to internalize the issue in a healthier way.

Helping students internalize this issue, while avoiding adverse psychological impacts, is perhaps the most difficult challenge facing anyone teaching a course about nuclear arms and war. The absurd realities of the nuclear arms issue can evoke feelings of despair and hopelessness that impede a student's progress not only in this course, but in non-related courses as well. In order to dispel such feelings, I have made it a practice to bring in as a guest speaker a psychiatrist who will address the psychological impacts of the nuclear arms race. And I repeatedly emphasize the message contained in the following quotation from Albert Einstein, which suggests that real change in the way we view nuclear arms is possible only if we confront the issue rationally and collectively: "This basic power of the universe cannot be fitted into the outmoded concept of narrow nationalism. For there is no secret and there is no defense; there is no

possibility of control of atomic energy except through the aroused understanding and insistence of the peoples of the world." □

1. C. Covey, et al., "Global Atmospheric Effects of Massive Smoke Injections from a Nuclear War: Results from General Circulation Model Simulations," *Nature*, 308 (March, 1984), pp. 21-25; P.J. Crutzen and J.W. Birks, "The Atmosphere after a Nuclear War: Twilight at Noon," *Ambio* 11, nos. 2 and 3 (1982), pp. 114-25; R.P. Turco et al., "Nuclear Winter: Global Consequences of Multiple Nuclear Explosions," *Science*, 222 (Dec. 1983), pp. 1,283-92.
2. P.R. Ehrlich, C. Sagan, D. Kennedy and W.O. Roberts, *The Cold and the Dark* (New York: W.W. Norton and Co., 1984); P.R. Ehrlich et al., "Long-term Biological Consequences of Nuclear War," *Science*, 222 (Dec. 1983), pp. 1,293-1,300; H.D. Grover, "The Climatic and Biological Consequences of Nuclear War," *Environment*, 26 (May 1984), pp. 6-13, 34-38; M.A. Harwell, *The Human and Environmental Consequences of Nuclear War* (New York: Springer Verlag, forthcoming); J. Petersen, *The Aftermath* (New York: Pantheon, 1983).

Social sciences

by Eric Markusen and John B. Harris

FOR MORE THAN two decades, courses in political science and its subfields of international relations and national security studies have examined crucial aspects of the nuclear problem. Today, deterrence in theory and in practice, arms control negotiations and treaties, East-West relations, inter- and intra-national determinants of national security policies, nuclear proliferation, causes of arms races and wars, and approaches to international conflict resolution remain intellectual issues in these fields. Theory and research, in turn, have contributed concepts and models for presenting these problems to students in courses which examine nuclear weapons and the threat of nuclear war. It is very important that the traditional policy-oriented disciplines continue to focus on nuclear issues and that the number of such courses expands to reach many more students.

In addition to political science, however, other behavioral and social science disciplines—psychology, sociology and economics—can also productively address important aspects of the nuclear problem, some of which have not yet received the attention they warrant. Several are identified in the following list, which is intended to encourage social science teachers to examine these issues, as well as to stimulate them to identify other relevant issues that can be considered in their courses.

- How effectively do our democratic institutions, which rely on a citizenry well-informed about vital issues, function with respect to nuclear weapons policies? Do current government policies reflect an informed national consensus about the proper role for nuclear weapons in U.S. policy, or simply their passive acceptance by a largely ignorant and apathetic body politic, aggravated by deliberate government attempts to conceal and obscure the true nature of our

nuclear weapons policies? What is the present level of citizen awareness of the nuclear threat, and what are the prevailing attitudes about such issues as the probability of nuclear war, the need for more or fewer weapons, and the nature of the Soviet Union, to name a few? What is the role of the media in the formation of such attitudes?

- Are there psychological and social obstacles that weaken the citizens' ability to confront and effectively respond to the nuclear threat? Such obstacles may include defense mechanisms against painful awareness, apathy resulting from ignorance or misinformation, paralyzing despair, and confusion and indecision stemming from the bewildering cacophony of opposing viewpoints by "experts."

- To what extent can defense contractors, government agencies, legislators and other policy makers develop vested interests in national security policies which are premised on ever-larger and more costly nuclear arsenals? Can such vested interests, by inhibiting objectivity in evaluating the need for new weapons and policies, lead to a short-sighted emphasis on political, institutional or economic gain?

- Are individuals who are directly involved with nuclear weapons and who are responsible for making decisions about their use susceptible to distortions of judgment and thinking? Can they develop tenacious psychological and economic dependencies on present policies and weapons? What are the implications of the bureaucratic milieu in which much nuclear weapons work is done? How are people recruited, trained, and promoted for positions involving nuclear weapons? Does the abstract, often euphemistic, language of nuclear war planners limit their capacity to comprehend the full reality of the consequences of nuclear war?

- What are the prevailing assumptions and images about the "enemy" held by those involved in national security affairs? Is the nuclear decision-making process itself vulnera-

ble to distortions resulting from crisis-induced stress, pressures toward conformity with group views, refusal to seek seriously and evaluate data that contradict current policy assumptions, and other impediments to open-mindedness?

- Does the very existence of huge nuclear arsenals and the threat of nuclear holocaust have an adverse psychological impact on people, particularly children and youth? If so, what are the manifestations and implications of this impact, and how might it be mitigated?

- What are the likely psychological and social problems that would be faced by people who survive a nuclear attack? What insights can the social sciences provide in the debate over the survivability and winnability of nuclear war?

- What are the prospects for a successful social reform movement to prevent nuclear war? What insights can be derived from other reform movements, both failed and successful? Are there potentially valuable approaches to conflict resolution that have not yet been adequately appreciated or tested?

Courses that address these and other human dimensions of the nuclear predicament could contribute significantly to the prevention of nuclear war. For example, by analyzing psychological, social, economic and political obstacles to citizen awareness and action, they can help the potential victims of nuclear war recognize and overcome personal resistances and can guide them in their struggles to bring about constructive social changes. Exposure of counterproductive and non-rational forces affecting policymakers and the policy process itself can stimulate popular demand for reform and perhaps suggest specific ameliorative measures. Examination of existing data on these issues is likely to prompt students and faculty to undertake imaginative new research that can shed further light on psychosocial factors that have made the nuclear problem so intractable.

We suggest two basic approaches for actually setting up a social science course on nuclear war: A course can include materials from several social science disciplines and survey a variety of issues, or it can focus on the contributions of one specific discipline. In either case, however, we feel that there are certain basics to be covered in any course and recommend that they be examined in one or more preliminary units. These include the nature and effects of nuclear weapons, the possible consequences of nuclear war, quantitative and qualitative aspects of current nuclear arsenals, U.S. and Soviet nuclear weapons policies, and how a nuclear war might start. Fortunately for the non-specialist in these areas, there are suitable readings and audio-visual resources available (see Resource Guide), and it is often possible to invite colleagues from relevant disciplines, such as medicine and military science, to make presentations to the class.

Our own course, "Nuclear Weapons, Nuclear War"—offered 11 times since 1980 at the University of Minnesota-Twin Cities under the co-sponsorship of the Department of Sociology and the Institute of International Studies—includes material from several social science disciplines. After spending about four weeks on the basics, which include

materials from the social sciences, we examine the successes and failures of past efforts to control the nuclear arms race. Then, for the next few weeks, the course examines causes and costs of the arms race, bringing in data from such fields as psychology, sociology, political science and economics to address the question of why these past efforts have proven to be so inadequate in relation to the continuing and increasing danger.

We examine the causes at three levels:

- international, for example, the action-reaction dynamic of the arms race and the problem of distorted images of the enemy;

- domestic, for example, problems of the policy-making structure and process and the influence of vested political and economic interests; and

- psychological, such as obstacles to effective citizen involvement and possible impediments to rationality and open-mindedness in individuals close to nuclear weapons. We also include a unit on lessons from the Nazi Holocaust for the nuclear age.

The section on costs then examines the economic impacts of defense spending, the issue of possible psychological damage from fear of nuclear war, the implications for democracy of concentrated governmental power and use of propaganda and secrecy, and the moral and ethical dilemmas posed by nuclear weapons of mass destruction. The course concludes with an examination of several current proposals to reduce the nuclear threat and a discussion of prospects for the future.

Throughout the course, we utilize audio-visual materials to help students visualize the weapons and their effects, as well as some of the people who have been intimately involved with them. The course begins with images of the destruction of Hiroshima and Nagasaki and the potential consequences of nuclear war. Our goal is to help students move from initial feelings of horror (and possibly fatalism) to the conviction that the nuclear predicament, while extremely difficult, is nonetheless amendable to resolution. Students are exposed to a variety of different approaches to reducing the threat. Given the highly controversial nature of the subject, we strive, through readings and guest speakers, to present all major positions on key issues.

Since no single social science-oriented course can hope to cover all relevant aspects of the nuclear problem, we present brief descriptions of several courses which exemplify different approaches, disciplines and topical emphases:

Psychology of nuclear war. According to its syllabus, the goal of this course is "to focus attention on psychological problems and issues flowing from the invention of nuclear weapons." Issues covered include: historical background, an anthropological approach to war, the technological base of the nuclear balance, clinical psychology and nuclear issues, social psychology and the nuclear threat, psychological aspects of the Cuban missile crisis, developmental psychology and the nuclear threat, and citizens' and policymakers' images of nuclear war. For further information contact Bernard Kramer, Department of Psychology, University

of Massachusetts-Boston, Boston, Massachusetts 02125-3393.

Politics of nuclear weapons. This political science course includes the basics that were discussed above as well as a critical examination of Reagan Administration policies and several current issues and controversies. Topics include: the spiral of international insecurity, how the bomb works, nuclear weapons effects, nomenclature of nuclear weapons, the evolution of Soviet and American nuclear weapons and doctrines, the nuclear balance, a historical overview of arms control, pro and con positions on Reagan Administration policies, nuclear weapons in Europe, the MX and other controversial systems, scenarios for the outbreak of nuclear war, economic aspects, proliferation, and different approaches to reducing the threat. For further information contact David Garnham, Department of Political Science, University of Wisconsin, Milwaukee, Wisconsin 53201.

War as a social problem. This course examines sociological and other social science literature on conflict and war in general, with particular emphasis on nuclear war. It begins with an examination of the meaning of a "social problem" and proceeds to survey several theoretical approaches to the causes of conflict and war. It then reviews social science data on the combatants themselves, addressing such questions as who they are, how they are chosen and trained, the dehumanization of enemies and military-civilian relations. Next, the differences between conventional and nuclear war are examined, and a variety of approaches to national security are analyzed. Finally, visions of the future and ethical questions are considered. A nuclear war film series is an integral part of the course, supplementing

the regular class sessions. For further information contact Allen Grimshaw, Department of Sociology, Indiana University, Bloomington, Indiana 47401.

U.S.-Soviet strategic relations. This course examines the strategic nuclear weapons and doctrines of the two superpowers, as well as the role of arms control in promoting national security for each. In order to explicate the dynamics of the strategic arms race, the course focuses on both technological developments and interactions between the two nations, including perceptions and misperceptions that each nation has about the other. Such current issues as the SALT and START negotiations and the controversy over nuclear forces in Europe are addressed. For further information contact Anne T. Sloan, Nelson A. Rockefeller College of Public Affairs and Policy, State University of New York, Albany, New York 12222.

The Holocaust and nuclear war. This innovative course examines both the Holocaust and nuclear war as problems for psychological inquiry. It begins by analyzing psychosocial causes of the Holocaust, as well as issues concerning victims and survivors. It examines in some detail the findings and implications of the infamous experiments reported by Stanley Milgram in his book *Obedience to Authority* (in which naive subjects willingly gave what they believed to be severe electric shocks to other subjects) for both the Holocaust and other recent atrocities like the My Lai massacre. It then examines conceptions of nuclear destruction, social psychological perspectives on intergroup conflict, psychological perspectives on the nuclear threat and psychological dimensions of current nuclear strategies. For further information contact A.G. Miller, Department of Psychology, Miami University of Ohio, Oxford, Ohio 45056. □

History

by Allan M. Winkler

THE HISTORY of the post-World War II period is the history of the nuclear age. As a historian of the recent American past, I had long taught atomic affairs courses at Yale University and the University of Oregon. But last year I decided to change the format with a course, "The United States and the Problem of the Nuclear Age," that would provide a framework within which to explore all the major developments—diplomatic, political and cultural—that have occurred in America since 1945.

History has always drawn on a variety of other disciplines, and it was clear that this new course should do so as well. Its basic organization would obviously be historical, but it would avail itself of collegial expertise in the humanities, social and natural sciences in order to give as full a picture as possible of the complexity of the atomic age.

Taught at the University of Oregon in the winter of 1984, the course drew on ideas from teachers and scholars at other

institutions but ended as its own distinctive blend. It followed a roughly chronological format from World War II to the present, but explored the different topics analytically as well. A number of colleagues gave guest lectures, so it was truly a collaborative effort, though I gave about two-thirds of the lectures myself to provide continuity. A weekly film series was also required for the students. The Bomb has been an important part of American popular culture, and film can supplement readings and lectures by giving a visual dimension to many of the important nuclear questions.

Lectures provided the basic course structure. We began by putting nuclear questions into the broad perspective of American and world history. Thus, the decision to drop the first atomic bombs was presented in the context of the diplomatic collaboration between the United States, Great Britain and the Soviet Union during World War II. The history of fallout and the drive in the 1950s for some kind of civil defense were sketched against the background of consensus and conformity that prevailed during that period.

The development of nuclear power was dealt with in the framework of economic policy, from the 1950s into the 1980s. We considered the recent wave of anti-nuclear sentiment within the context of the protest movements that began in the 1960s, went into a kind of dormancy and then more recently proceeded to revive.

The guest lectures were very important. The efforts of colleagues from physics, biology, mathematics, psychology, sociology, law and English gave real substance to the course. University of Oregon President Paul Olum, who had been a member of the Manhattan Project as a young graduate student, made the physics of the bomb comprehensible to students with little background and spoke movingly about his personal view of what happened at Los Alamos. Biology professor Aaron Novick, also a member of the Manhattan Project, gave students a good sense of the possible effects of nuclear war on the physical environment. English professor Barbara Clarke Mossberg gave a splendid talk on Walter H. Miller, Jr.'s novel, *A Canticle for Leibowitz*, placing it squarely within the framework of American literature, apocalyptic writing and science fiction.

Course readings tried to touch on as many different topics as possible. Barton J. Bernstein's anthology *The Atomic Bomb* gave students a sense of the historical controversy surrounding the decision to use that weapon. *A Canticle for Leibowitz* demonstrated the part the bomb played in popular culture. The Harvard Nuclear Study Group's *Living with Nuclear Weapons* provided an introduction to arms control questions. *The Final Epidemic*, edited by Ruth Adams and Susan Cullen, and *The Day After Midnight*, edited by Michael Riordan, gave an idea of the projected consequences of nuclear war. Jonathan Schell's *The Fate of the Earth* served to exemplify the current writing that has provided an underpinning for the growing concern about the problems of nuclear energy. Finally, an anthology on other topics was compiled and duplicated for student use.

The films, shown one evening each week, proved to be both popular and instructive. They ranged from documentaries like *The Day After Trinity*, to docu-dramas like *The Missiles of October*, to works of fiction like *On the Beach* and *Dr. Strangelove*. Students reared in an electronic environment responded readily to film, and I found myself able to draw on the films' images and insights in my lectures and to make connections to themes explored in the reading.

In the initial planning stages for the course, I made use of UCAM's "Summary of Courses on Nuclear War" (see Resource Guide). Of particular use were the syllabuses of "The Nuclear Arms Race," taught by David Rosenberg and Richard Wolfson at Middlebury College; "Nuclear Energy and Contemporary History," taught by Robert Williams at Washington University; "Technology, War and Peace," taught by Paul Doty, Albert Carnesale and Michael Nacht at Harvard University; and "The Bomb: An Inquiry into Technology and Cultural Change," taught by Mark Ryan at Yale University. Their titles were suggestive, and their syllabuses provide useful ideas on books, films and lecture topics.*

History provides a useful framework for exploring countless questions about the dilemmas of the recent past. By drawing on different disciplines, working their contributions into a cohesive structure and exploring issues in a roughly chronological way, the Oregon course was able to give students a broad overview of some of the most pressing problems of our time. □

*Other courses with a central emphasis on cultural history: "Nuclear Weapons in American Thought and Culture," Paul S. Boyer, Department of History, University of Wisconsin at Madison; "Nuclear Weapons and American Culture," James J. Farrell, The Paracollege, St. Olaf College, Northfield, Minnesota; and "The Social History of Nuclear Weapons," William F. Vandercook, Department of History, University of Illinois at Chicago.

Humanities

by Philip N. Gilbertson

HUMANITIES disciplines pose the questions and probe the values closest to the human concerns of the global community—cultural, moral, intellectual, aesthetic and spiritual. The humanities have perennially responded to violence and injustice with insight and powerful images that animate individuals to turn society in new directions. And the humanities do so today in response to the nuclear threat, although courses on this subject in the humanities did not start appearing until 1982.

Most teachers in any discipline by now recognize that the broad cultural concerns addressed by the humanities are fundamental to a thorough discussion of the nuclear issue. Interdisciplinary courses on nuclear war have frequently included works of philosophy, literature and the

arts because they move students to deeper perspectives on the arms race and the consequences of nuclear war through the emotive power of figurative language, or they capture students' intellectual and moral imaginations through the reasoned claims of rigorous conceptual and ethical thinking. The humanities serve as a kind of prophet who, though not perceiving the facts of a future global holocaust, moves his listeners by envisioning the truth of it.

Philosophy, specifically, offers a critical examination of key concepts in the nuclear debate and the tools of logical analysis to get at basic assumptions and evaluate arguments on the problem. From epistemology to game theory, from informal logic to ethics, philosophy probes the intellectual structures of our cultural thinking which underlie mass media treatments of the issue. Examples of what specific questions philosophers are talking about will be more acces-

sible soon: Two anthologies which will be published by early 1985 are *Nuclear Weapons and the Future of Humanity: The Fundamental Questions*, edited by Avner Cohen and Steven Lee, and *Nuclear War: Philosophical Perspectives*, edited by Michael Fox and Leo Groarke. See also the special double issue of *Philosophy and Social Criticism*, "Philosophy and the Debate on Nuclear Weapons Systems and Policies," 10, nos. 3 and 4 (December 1984), edited by William Gay. Gay also has a slightly dated 50-page "starter kit" for philosophy teachers called "Philosophy, Nuclear War and Disarmament"; it is available for \$4.00 from him (Department of Philosophy, University of North Carolina at Charlotte 28223). Three national organizations can provide additional resources and contacts: Concerned Philosophers for Peace (Box 42393, Portland, Oregon 97242), International Philosophers for the Prevention of Nuclear Omnicide (1426 Merritt Drive, El Cajon, California 92020) and Philosophers for Social Responsibility (Department of Philosophy, State University of New York, Stony Brook 11794).

The concrete particularity of literature, film and the other arts draws students beyond the panoply of scientific, technical and political data to witness something of the lived experience of the nuclear threat and of the consequences of a nuclear war. The self-conscious use of precise language and image and the meditative subtlety of art pull all the global information into municipal court. Paul Briens's comprehensive history and survey, *Nuclear Holocaust: Atomic War in Fiction 1945-1984*, hopefully will be published soon and will include an annotated bibliography of 600 titles. (Washington State University's Holland Library is establishing a comprehensive collection of nuclear war fiction.) H. Bruce Franklin's recently published anthology of science fiction ("any imaginative literature projecting either nuclear war or an end to the nuclear threat is by definition science fiction"), *Countdown to Midnight*, includes a long historical introduction on the mutual influences of science fiction, scientists and public policy, from the Manhattan Project to the Reagan Administration. Examples of how contemporary writers and artists are responding can be found in Morty Sklar's 1984 anthology *Nuke-Re-ouke: Writers and Artists Against Nuclear Energy and Weapons*; the special issue, "Writers in The Nuclear Age," of *New England Review and Bread Loaf Quarterly* (Summer 1983); and Kenzaburo Oe's 1984 anthology *Atomic Aftermath: Short Stories about Hiroshima and Nagasaki*. Barbara Eckstein, of the University of New Orleans English Department, is compiling an international anthology of poetry and fiction from each continent, with essays on "nuclear facts."

As suggested in the descriptions below, courses in all literatures are appearing, and courses in English composition organized around the nuclear issue are now common. (Check especially with these veterans: Allan Brick of Hunter College; Richard Elias of Ohio Wesleyan University; and, at Virginia Tech, Mary Le Donne, coordinator of a multi-section course, "The Rhetoric of Modern War," at a "militarily-inclined institution.") The language and rhetoric of nuclear war are also gaining wider attention in courses. (For

a list of class-tested resources on "nukespeak," check with Daniel Zins, General Studies, Atlanta College of Art, who includes a major section on this subject in his course, "Writing After Hiroshima: Literature and Language in the Nuclear Age.") Finally, the Winter 1984-1985 issue of the *Kentucky English Bulletin*, "Teaching English in a Nuclear Age," contains 11 important articles on this subject. Of particular interest are Michael Foley's "Teaching Chaucer in a Nuclear Age," Carol Rainey's "Poetry of the Nuclear Age: A Checklist," Sam Totten's "An Annotated Bibliography of Nuclear Readings for the English Classroom," and Daniel Zins's "Nukespeak." It will be available in February 1985; single copies may be ordered for \$2.00 each from Ken Davis, Editor, *KEB*, Department of English, University of Kentucky, Lexington, Kentucky 40506.

While a variety of documentary films are commonly used in general nuclear courses, it is not surprising that Stanley Kubrick's *Dr. Strangelove* (1964) remains the most popular nuclear film nor that Peter Watkins's *The War Game*, a fictional "documentary" filmed in 1967, is still the most powerful witness against nuclear holocaust. (Watkins is now filming an updated version.) Over-dependence on less-accomplished fiction films such as *On the Beach* (1959) and *Fail-Safe* (1964) may be eased by new films such as *Testament* (1983). Proof that documentary film can be and should be art is not only Alain Resnais' *Night and Fog* (about the death camps) but also Erik Barnouw's *Hiroshima/Nagasaki, August 1945* (1970). An exhaustive annotated list of relevant films, including information on their availability, is the 1984 *National Directory of Audiovisual Resources on Nuclear War and the Arms Race*, edited by Karen Sayer and John Dowling (University of Michigan Media Resources Center). (For film resource people, check with Jim Welsh, editor of *Literature/Film Quarterly*, Salisbury State College.) The visual and performing arts especially remind us that all human life is jeopardized by the bomb and that the most subtle of creative human energies respond to the threat. An important recent collection (along historical lines) is *Art Against War*, edited by D.J.R. Bruckner, Seymour Chwast and Steven Heller.

Professional activities on the nuclear issue are expanding rapidly in all these humanities disciplines. Space limitations preclude listing a half dozen national conferences in separate disciplines scheduled for 1984-1985. But the following is a list of representative humanities courses:

In philosophy. "Morality of Nuclear Weapons," taught by Steven Lee of Hobart and William Smith College, Geneva, New York 14456. Topics include: introductory discussion of arguments, morality and war; moral distinctions within war; utilitarian moral theory; formalist moral theory; just-war theory; nature and effects of nuclear weapons and nuclear deterrence strategies; justifiability of nuclear war; morality of nuclear deterrence; alternatives: morality and feasibility.

In English. "Nuclear War Fiction," taught by Paul Briens, English Department, Washington State University, Pullman 99164. This is a senior-level survey course open to all under-

graduates. It emphasizes discussion of fiction but also includes background and history of nuclear weapons and the arms race. Term papers and class reports.

In German. "Krieg und Frieden in der deutschen Literatur: Vom Barock bis heute," taught by Irmgard Hunt, Germanic and Slavic Languages, Texas Tech University, Lubbock 79409.

In Asian studies. "Hiroshima/Nagasaki and the Literature of Survival," taught by David Goodman, Asian Studies,

University of Illinois at Urbana-Champaign 61801. Topics include: the politics of death: the bomb, the holocaust; theoretical perspectives: Hiroshima, the survivor; culture and the redaction of memory; a diary of Hiroshima; diaries and memoirs of the Holocaust; the literature of mourning: Hiroshima; mourning and transformation: the Holocaust; the drama of survival; and the legacy.

Text lists for each of these courses may be obtained from the instructors. □

Religious studies

by Edward Tabor Linenthal

IN HIS 1982 PRESIDENTIAL address, Gordon Kaufman called upon members of the American Academy of Religion to appreciate the "utterly new historical situation into which the possibility of all-out nuclear warfare has brought humanity" and asked that students of religion draw upon the "deepest religious resources . . . to provide orientation and guidance for our contemporary situation." In religious studies, as in other disciplines, such keynote statements both reflect and motivate scholarly inquiry into the complex of issues surrounding the possession of nuclear weapons and the threat of nuclear war.

Courses offered by departments of religious studies in state or private secular schools may differ in both purpose and content from courses offered in church related schools or seminaries. The latter may interpret historic sources of religious authority (scripture, theological tradition) quite differently. Nevertheless, there are several distinct points of entry into nuclear concerns that are shared by all students of religion.

Several types of courses fall under the general rubric "religion and ethics." For example, James Gustafson (University of Chicago Divinity School), James Johnson (Department of Religion at Rutgers University), and Gene Outka (Department of Religious Studies at Yale University) focus on the history of Jewish and Christian assessments of war and peace. After attending to the biblical roots of just war, crusade and pacifism, courses like theirs examine the impact of nuclear weaponry on these traditional moral stances. Other ethics courses view nuclear war as one of a whole range of contemporary moral dilemmas, such as abortion and world hunger. Good examples of this type of course are those offered by Ronald Green of the Dartmouth College Department of Religion; Jeffrey Stout of Princeton University's Department of Religion; and Walter Noyalis of Anna Maria College in Paxton, Massachusetts.

Still other ethics courses understand nuclear war as only one of the modern manifestations of violence. Examples are courses offered by J. Arthur Boorman of McGill University's Department of Religious Studies; Paul Deats of the Boston University School of Theology; Jerry Folk of the De-

partment of Religion of Augustana College in Sioux Falls, South Dakota; Robert Hough of the Department of Religion at Central Michigan University; and Gerard Vanderhaar of Christian Brothers College in Memphis. In many of the ethics courses, the Catholic bishops' Pastoral Letter "The Challenge of Peace: God's Promise and our Response" provides the context for discussion. Courses in religious studies have properly noted the significance of the Letter for its wide cultural impact. In his course, "War and Peace in the Nuclear Age," Dennis McCann, of DePaul University, focuses on the principles and application of the Letter, its European counterparts and the arguments of its various critics, especially Michael Novak.

Another category of courses emphasizes Kaufman's contention that the present situation calls for radical reinterpretation of traditional religious responses to war. Such courses pay their dues to the historical development of ethical stances, but the bulk of the courses are clearly designed to give students a working knowledge of the nature and effects of nuclear weaponry and such modern issues as limited nuclear war, arms control, images of the enemy and alternative strategies for security. Systematic reflection on the adequacy of traditional moral categories to speak to these issues takes place after a thorough grounding in the policy and technical concerns. Courses of this sort are offered by G. Clarke Chapman, Jr. of Moravian College in Bethlehem, Pennsylvania; Alan Geyer of the Center for Theology and Public Policy in Washington; and June O'Connor of the Program in Religious Studies at the University of California at Riverside. Several classes also use the "Riverside Church Disarmament Reader," prepared by George Hunsinger of New Brunswick Seminary; it is available from the Riverside Church in New York City.

More recently, other students of religion, sensitive to the crucial role symbols play in the construction of a coherent worldview, describe nuclear weapons' symbolic function. Ira Chernus, of the Department of Religious Studies of the University of Colorado, believes that the human response to the absolute power of the bomb is expressed in contemporary variations of traditional religious symbolism of apocalypse and salvation. There is, he suggests, a "bewildering maze of symbolic meanings surrounding nuclear weapons."

His work is of significance for those who want to develop courses centering on the cultural and comparative symbolism of nuclear weapons and nuclear war.

Many of these issues can be addressed in already existing courses, but there is still much to do. More attention needs to be paid to the European and Asian pastoral letters.¹ Students of American religion, in addition to charting the kinds of cultural symbols that are pointed to by Chernus's work, need to be sensitive to the voices emerging from a variety of traditions in our culture. Recent discussion of the significance of nuclear weapons for Christian faith among diverse groups of American evangelicals is especially important.² And students of non-Western religions have much to tell us about the insights on modern war and visions of future conditions of peace offered by their traditions.

There are, then, a variety of methods and interests that

people in religious studies bring to their concerns about nuclear weapons and nuclear war. I expect that courses dealing with such issues will multiply as the symbolic and religio-ethical dimensions of nuclear war come to occupy their appropriate place in the study of religion. □

1. For information on these see James V. Schall, ed., *Bishops' Pastoral Letters: France and West Germany* (San Francisco: Ignatius Press, 1984); and Mark Heirman, "Bishops' Conferences on War and Peace in 1983," *Cross Currents*, 33, no. 3 (Fall 1983), pp. 275-88. Several recent review essays are quite useful in describing American Protestant and Catholic thinking on nuclear war. Both are found in *Religious Studies Review*, 10, no. 2 (April 1984), pp. 97-102 and pp. 103-107.

2. A May 1983 evangelical conference, "The Church and Peacekeeping in the Nuclear Age," represents the first time that diverse groups of evangelicals have come together to discuss such issues. For more information, see David A. Hoekma, "Evangelicals Confront the Arms Race," *The Reformed Journal*, 33, no. 8 (August 1983), pp. 10-13.

Medicine

by Christine K. Cassel and Michael McCally

INFORMATION about the medical consequences of nuclear weapons on populations and the ethical issues for physicians and other health workers was first systematically presented by Physicians For Social Responsibility (PSR) in a still-accurate series of articles in the *New England Journal of Medicine* in 1962. In 1979, PSR began a nationwide series of symposiums on a continuing medical education model. In response to these educational activities at the postgraduate level, medical students prompted concerned faculty at several academic centers to teach the material in the undergraduate medical curriculum.

Today, a large number of medical schools in the United States and around the world offer some activity concerned with nuclear war. In a recent survey of American medical schools, 63 percent of the respondents responded affirmatively to the question, "Does your institution offer or sponsor any activity dealing with the medical aspects of nuclear war?" Thirty percent offered one or more hours in an existing required course; 23 percent named a continuing medical education program or informal study group; 18 percent said there were one or more hours in an existing elective course; 16 percent indicated a single lecture or film; and 13 percent said they offered an elective course concerned solely with nuclear war. No school reported a separate required course on this topic, although in several schools curriculum-committee approval had been obtained.¹

Innovative teaching methods were reported, including use of student diaries and drafting letters to the editors of medical journals. Some students prepared and gave public talks based on their study. Less than a third of the programs had any student examination, but almost all had some form of evaluation, usually student critique of the course. A similar survey has just been completed of the world's 1,130

recognized medical schools; 54 percent of the 140 responding schools reported some activity dealing with the medical aspects of nuclear war.

The objectives of a course, which we taught first at the Oregon Health Sciences University and later at Mount Sinai Medical Center in New York, were to enable students:

- to demonstrate knowledge of nuclear weapons, including the medical, social and ecological consequences of their use;
- to identify principles of social ethics which define a role for health professionals in an age of nuclear weapons; and
- to define appropriate professional activities consistent with these principles.

Our course was conducted in ten weekly sessions, using a syllabus that contained the required readings and detailed lesson plans. The plans included learning objectives, required and optional readings on the lecture subject and study questions for each session. Each class session began with a 30-minute lecture by the faculty or a guest speaker, or an audiotaped presentation by a recognized authority in the field. This was followed by discussion of both the presentation and the readings. The faculty took special care to focus the discussion on the relevant medical facts and to emphasize development of an accurate base of information.

But perhaps even more important than the medical information is the discussion of social and political responsibility. Since the industrial revolution, medicine has accepted responsibility for public health in addition to care of individual patients. If one agrees that nuclear war is not survivable or permissible, then the public health responsibility of physicians justifies social and political activism toward reducing the risk of nuclear war.

The topics that are taught may vary, depending on the particular interests and expertise of a faculty, but the cus-

tomy content for a medical course on nuclear weapons includes:

- an introductory discussion of why the material is relevant for health professionals. The film *The Last Epidemic* remains very useful for this.
- an overview of the weapons and delivery systems, including their physical characteristics and strategic implications;
- immediate and long-term medical effects of the detonation of one or more thermonuclear weapons;
- radiation biophysics;
- ecological and atmospheric effects, including those predicted by the nuclear winter model;
- civil defense plans and the feasibility and efficacy of such plans from a public health perspective;
- psychological aspects of nuclear war and of the aftermath of the nuclear explosions in Japan;
- psychological aspects of international relations which contribute to the perpetuation of the arms race;
- socio-economic effects of the arms race;
- history of the nuclear arms race and strategies for arms control and conflict resolution;
- ethical basis for the responsibility of health professionals in this issue.

A social responsibilities course such as this could be conducted around other topics such as occupational health hazards, health aspects of nuclear power or health care and poverty. We chose the topic of nuclear war in part in response to student request and in part because of our personal concern about the issue. Our course has a simple format and uses readily available teaching materials. Useful textbooks are available.² A model curriculum has been developed by PSR and can be obtained by writing to PSR at 639 Massachusetts Avenue, Cambridge, Massachusetts 02139.

Because few medical school faculty claim nuclear weapons effects as their primary area of expertise, many have been reluctant to teach courses on this subject. If funds are available, one solution is to bring in experts to lecture. But

students need a primary faculty person to relate to, since the overwhelming nature of some of the material inevitably evokes emotional responses from those encountering it for the first time. Sensitivity to student reactions is important if the course is not simply to produce anger or despair. Knowledge is, in fact, empowering if it is shared in a professional context. An alternative approach is that faculty use the opportunity of organizing such a course to educate themselves. In a seminar model both students and faculty are learners.

What has been the outcome of the appearance of nuclear war issues in U.S. medical education? One result is that mainstream American medical organizations have accepted the premise that nuclear war would be an unparalleled catastrophe, that prevention is the only rational policy and that physicians have a significant role to play in educating themselves and their political leaders.

To evaluate the effectiveness of an activity such as medical education about nuclear war, one assumes that nuclear war is less likely in a society fully informed of the consequences of such a war. A recent survey used a multiple choice questionnaire to measure knowledge and attitudes about nuclear war before and after an educational presentation on the weapons and their consequences. A striking inverse correlation was found between the numbers of respondents concurring with the statement, "There are causes worth fighting a nuclear war for," and scores on a factual test of nuclear weapons effects. It would appear that specific knowledge of knowledge of the realities of nuclear weapons effects is associated with deep reluctance to consider their use.³ □

1. M. McCally, et al., "A Survey of Medical School Programs on Nuclear War," *Journal of Medical Education*, 59 (1984), in press.

2. R. Adams and S. Cullen, *The Final Epidemic: Physicians and Scientists on Nuclear War* (Chicago: Bulletin of the Atomic Scientists, 1981); E. Chivian et al., *Last Aid: The Medical Dimensions of Nuclear War* (San Francisco: W.H. Freeman and Co., 1982); C.K. Cassel, M. McCally and H.J. Abraham, *Nuclear Weapons and Nuclear War: A Sourcebook for Health Professionals* (Philadelphia: Praeger Scientific, 1984).

3. P. French, "The Physician as Nuclear War Educator," *New England Journal of Medicine*, 310 (1984), pp. 1,397-98.

Law

by J. Stephen Dycus

FOR BETTER OR FOR WORSE, lawyers have played a key role in the development and deployment of U.S. nuclear weapons. They have also had an important part in efforts to reverse the arms race. Recognition of these roles has led to the introduction of arms control courses into the curriculums of several law schools.

Every lawyer has professional skills and experience which could enable him or her to influence the direction of the arms race: logical analysis, persuasion, negotiation and an intimate knowledge of the workings of government. And

because lawyers occupy positions of power and prestige in our society, they have a special responsibility to help make our future more secure.

A number of law teachers have begun helping their students (and one another) to confront and deal with the threat of nuclear war and to search for ways to abate that threat. They are examining international efforts to limit the growth of nuclear weapons and formulating new strategies for reaching meaningful agreements. They are studying the legality of nuclear weapons, applying the principles of both international law and domestic law. And they are talking about the interaction of legal and political processes in such

matters as legislative drafting and lobbying, weapons procurement and voter education. Furthermore, they are finding that coverage of these issues in the classroom can help to advance more traditional educational goals: Every aspect of the legal process can be examined in the context of this critical current problem; information and skills from other law school courses can be integrated. Student interest is high, and opportunities for original research and writing are almost unlimited.

In David A. Koplow's course at Georgetown University, "Arms Control and National Security," 16 students met weekly to discuss readings prepared by the teacher. They also wrote, but did not present in class, substantial papers on related topics. Class meetings covered a wide range of subjects, including: the report of the Scowcroft Commission; strategic theory and defense; constitutional war powers; adoption, verification and abrogation of treaties; the physical and social effects of nuclear war; organizational politics and economics; the negotiating process: Soviet and U.S. attitudes, bargaining strategies; SALT: strategic offenses and defenses; debates over current arms control proposals; nuclear weapons in Europe; proposals for a comprehensive test ban treaty, problems of verification; non-proliferation: export of nuclear materials and technology; chemical weapons; conventional forces in Europe; integration of theory and law: simulated negotiation for an anti-satellite weapons treaty; new approaches to arms control. Most of the readings in the course were drawn from newspapers and other periodicals and from government publications.

Anthony T. Kronman of Yale Law School teaches a course called "Nuclear Arms Control," in which 35 students enrolled last year. The first quarter of the course was spent discussing the historical evolution of deterrence doctrine and its intellectual refinements, beginning with readings from Hobbes's *Leviathan* and Clausewitz's *On War*, to introduce the classical notions of war and sovereignty which the existence of nuclear weapons call into question. The second part of the course examined the arms control process from a variety of perspectives, with readings from books by John Newhouse and Strobe Talbott on the SALT treaties and essays on bureaucratic constraints on or incentives for arms control. Next, the class explored several issues of contemporary importance, including the problem of ICBM survivability and the role of nuclear weapons in NATO strategy. The concluding part of the course dealt with the moral and

philosophical issues raised by nuclear weapons and deterrence strategy. Here, the Catholic bishops' Pastoral Letter and books by Robert Lifton and Jonathan Schell furnished a background for discussion.

A new course, which Arthur L. Berney at Boston College and I are developing deals exclusively with constitutional and domestic law issues of war-making and national security. Entitled "The Lawyer as Peacemaker," it stresses the use of familiar legal skills to influence the arms race. Among the topics covered are: use of the Freedom of Information Act in national security cases, prior restraints on publication, war powers of the president and Congress, government emergency powers, environmental law and national security, state and local peace initiatives, and the defense of civil disobedients. In addition to the usual appellate opinions, statutes, regulations and texts, the course materials include pleadings, jury instructions and correspondence from recent and pending cases.

Among other courses dealing exclusively with arms control issues are those taught by Abram Chayes and Antonia Chayes at Harvard University, by Robert F. Drinan at Georgetown University, and by Elliott L. Meyowitz at Cardozo Law School in New York. John H. Barton, with others, offers an undergraduate arms control course that is taken by many law students at Stanford University.

A larger number of teachers take up national security issues in more traditional law school courses. Typical of the offerings are: Public International Law (Charles E. Biblowitz, St. John's University; George Bunn, University of Wisconsin; James J. Friedburg, West Virginia University); Human Rights Law (Paul L. Hoffman, Southwestern University; Frank C. Newman, University of California at Berkeley); Environmental Law (Kenneth A. Manaster, University of Santa Clara; Dean H. Rivkin, University of Tennessee); Legal Process (Arthur L. Berney, Boston College); First-year Research and Writing (Nancy E. Grandine, Vermont Law School); and Alternative Dispute Resolution (Jeffrey H. Hartje, Gonzaga University). The Lawyers Alliance for Nuclear Arms Control in Boston has also produced materials for a six-hour mock negotiation—based on the intermediate-range nuclear forces talks in Europe—which are being used in negotiations courses at several schools this year. The same organization maintains a clearinghouse for law teachers from which additional information may be obtained by calling (617) 227-0118. □

Journalism and mass communications

by William A. Dorman

FOR MOST AMERICANS the Cold War has meant living in a psychological garrison state. Never before have we had to endure perpetual anxiety or contend with what a vast majority has come to perceive as a permanent enemy. Undergirding this sense of endless crisis is the threat

of nuclear arms. We find ourselves locked into our own Hundred Years' War, confronted by the ultimate siege weapon.

The unprecedented situation in which the United States now finds itself vis-à-vis the Soviet Union also significantly differs from past wars, in that Americans have been mobilized to support the confrontation without the two adversaries actually engaging in battle. The Cold War in some

fundamental ways, then, has been fought in the trenches of the mind.

Given this unique stalemate and its subjective dimension, those who would challenge nearly 40 years of nuclearism must understand clearly the nature of the symbolic environment in which people lead their lives, together with the forces—most particularly the mass media—that shape the public's second-hand world. For most Americans, on either a day-to-day or long-term basis, the mainstream press is likely to serve as their primary text on foreign affairs, defense policy and nuclear strategy. Also the press, by legitimizing some ideas and not others, determines the limits of discussion of defense policy for the average citizen. Most important, the press can play a decisive role in providing the public with a sense of who is enemy and who is friend; of who deserves our help and admiration and who deserves our hatred, fear and contempt; of what is in the country's interest and what is not: in short, with an impression of what is right and proper in international politics.

In turn, the media significantly contribute to the creation of a general mood for the politically active public, a mood that can set the boundaries of policy by producing passivity and acquiescence on the one hand or alarm and active dissent on the other. This mood consists of a generalized sense of whether foreign policy actions are taken in the country's best interests. The best evidence that this mood can have significance in an open society is the government's history of systematic attempts to deceive and manipulate public opinion about matters ranging from Soviet nuclear strength to American involvement in Latin America.

A COURSE IN "War, Peace and the Mass Media," such as I have taught since 1972, can simultaneously serve several audiences: the peace studies major, the journalism major and the student in general education. Specific goals include:

- bringing about an understanding of mass media as a system that creates a general yet highly significant public mood about defense and foreign policy;
- developing criteria for judging media performance in coverage of foreign crisis or conflict situations;
- creating awareness of media-foreign policy dynamics;
- considering how the press affects the debate on nuclear weapons;
- examining how journalists and members of the public can bring about change in the press's treatment of foreign and defense policy issues.

The basic assumption of the course is that consideration of the nuclear dilemma in particular cannot be separated from an examination of how the mass media have behaved during the Cold War. People made afraid by conventional conflicts are those most receptive to nuclear solutions. Moreover, an escalating clash of U.S. and Soviet interests in, say, the Middle East seems at least as likely to trigger Armageddon as a preemptive strike. Therefore, how the press portrays challenges to American power in the Third World, for example, has everything to do with the nuclear concern.

Given this assumption of "deadly connections," extensive attention is paid to how the mainstream press has covered foreign conflicts in which the United States has been involved since World War II. The major questions considered in a typical semester include the following: To what extent do the U.S. media provide an accurate picture of foreign events where American interests are involved? To what degree are the media independent of foreign policy-makers? What is the relationship of the media to the national security state? How have the media presented alternative views on nuclear weaponry?

Class discussion centers on a series of case studies of how the press presents the Soviet Union, American intervention abroad, the arms race, the behavior of such clients as the shah of Iran, domestic dissent, the European freeze movement and so on. Other topics include the selling of the Pentagon, the history of nuclear doctrine, the rhetoric of deterrence, "right to know" versus national security, theories regarding media and social control, the nature of propaganda, and the mass media as a part of the military-industrial complex.

Instead of a term paper, each student must complete a case study of mainstream press coverage of a foreign crisis involving the United States since World War II, or a similar study of how the press has covered a related issue domestically, such as defense spending or the MX missile. The student is asked to compare mainstream coverage with one or more alternative sources, such as *Nuclear Times* or *The Nation*. The student's task is not to decide which medium came closer to "the truth," but rather, to try to determine whether the mainstream reporting included all that was reasonably knowable at a given point in history; and whether the coverage tended to open political questions, or to close them by selective reporting. Students often say that the case study is the most valuable part of the course. A course outline, reading list and term project guide is available from William A. Dorman, Department of Journalism, California State University, Sacramento, 6000 Jay Street, Sacramento, California 95819.

Few other such classes appear to exist in the United States. But a Center for War, Peace and the News Media has been established at New York University to do research and publishing on the subject and serve as a clearinghouse for information. The Center, which sponsored a major conference in the spring of 1983, also plans to develop coursework on relevant topics. For information, contact David Rubin or Robert Karl Manoff at the Department of Journalism and Mass Communication, New York University, 1021 Main Building, New York 10003.

Another significant development occurred in the summer of 1984. The Association for Education in Journalism passed a resolution urging journalism educators to consider nuclear issues in their teaching, research and public service; urging journalists to cover these matters "in a way that stresses issues and values as well as facts and events" and that accords access to all viewpoints; and committing itself to plan appropriate conference sessions in coming years. □

Education

by Susan Alexander and Tony Wagner

DEPARTMENTS AND schools of education, like many other college and university units, are increasingly coming to believe that they have a responsibility to educate for nuclear literacy. As a result, education faculty are facing important decisions about what kind of nuclear instruction may be appropriate for future primary and secondary school teachers. This question has two aspects: What do adults, as educators, need to know? What should young people be taught?

These questions must be addressed for two reasons:

- Many young people do not believe in the ability of individuals or groups to affect public policy.¹ In a democratic society this view of government as indifferent to public opinion results in cynicism and apathy.
- Many young people believe nuclear war is inevitable. They feel helpless in a situation they see as out of control; they feel pervasive despair about the future of their nation and world.²

Because of these findings, educators are recognizing that nuclear education should do more than merely provide information; it should also encourage students to become involved in the critical issues of their time. Young people need models of men and women who have helped to improve their world; they need experiences of empowerment in their own lives. Nuclear education, in its broadest context, has the potential to develop hope and responsibility for the future.

Specific questions now being considered in departments and schools of education relate to subject matter, age-appropriateness, guidelines for implementation in basic curriculums, and the nature of the teaching process itself. There have been several important developments in the last few years.

Members of education faculties from Lutheran colleges recently formulated guidelines and recommendations for addressing these issues. While they viewed curriculum and instruction as important, they concluded that "the more pressing need is to help children deal with what they already know, and with how they already feel about it." Their recommendation was that education faculty in Lutheran affiliated colleges devote "considerable attention" to activities that would inform themselves and their students how to "contribute to making this a world free from the threat of nuclear destruction." But because no single academic discipline can bestow full nuclear competence, they also advised that all professional courses "be reviewed and perhaps some new courses created with consideration for our goals in terms of nuclear-age literacy."³

ONE OF THE FIRST credit courses on teaching nuclear

issues to be offered in a graduate school of education was "Education for Peace in a Nuclear Age," taught at Harvard in 1984 by Roberta Snow.⁴ Her course introduces prospective teachers and education policy-makers to the issues and problems involved in the methods of teaching multiple perspectives. Course themes included: psychological aspects and developmental considerations; physics and effects of nuclear weapons; deterrence; teaching about the Soviet Union.

A common theme in Snow's work and that of other pioneers in this field is that *what* is taught—that is, content and topics—is less important than the teaching process itself. Thus, in three-quarters of Snow's class sessions outstanding spokespersons in each field were brought in; there was frequent use of videotapes; students kept journals to reflect on the course content, methodology and impact; and students ran class sessions and presented their projects.

Further, Snow and others have found that debate—the traditional approach to critical thinking about controversial topics—is of limited value in the classroom when dealing with nuclear problems. Debate, suggesting the "other side," fosters adversarial positions. Debate polarizes; students focus on listening to opposing views with an eye to counteracting them, seizing upon their failures or tearing them apart.⁵ The purpose of debate is to arrive at the "right answer," not to help understand other people's perceptions and positions. In short, debate is tied to old ways of thinking about conflict and confrontation, winning and losing.

Materials for the Harvard course represented a variety of perspectives, with the aim of helping students discover what may be right, not wrong, about an argument or position. In this way, critical thinking becomes for students the process of "taking a leap into the belief systems of others, not only to understand but to validate viewpoints [they] are accustomed to rejecting. . . . They learn to reconstruct the life experiences and value systems that might lead to such conclusions."⁶

This emphasis on dialogue in teacher education courses trains future teachers to present models of the value of negotiation and compromise. Developing less adversarial ways of thinking allows for the emergence of a more interdependent world view—perhaps a key concept in the search for solutions to the nuclear dilemma.

As a result of experience gained in piloting new high school curriculums, Snow and others have found that a more collaborative approach to understanding the central problems of our time sparks students' hope in the possibility of creating change. They become more interested in taking a stand for what they believe; they develop new attitudes about the responsibility of citizens in a democracy.

One student in a Boston high school course, "Decision Making in a Nuclear Age," reported:

The most embarrassing part of this course was when you asked me to describe a time I stood up for something that I believed in. I went home trying to remember and I couldn't think of any time. . . . I hope by the end of the term I'll be able to have something to answer to that question.

Nuclear-age education in the lower schools offers structure for students' interest in effecting change. Students are encouraged to choose and develop action-oriented projects. They might survey their classmates about problems of racism; write a letter to the editor for or against the MX; or even work on getting a vacant lot cleaned up. Indeed, another form of active citizenship—community service—has recently been recommended by Ernest Boyer and other prominent educators as a requirement for all high school students. Such opportunities enable young people to overcome their cynicism, realize the importance of acting on conviction and begin to understand the democratic process by which individuals working together can make a difference.

The pioneering work of Snow and others represents both a beginning and a new direction. Courses in departments and schools of education are currently in the first phase of development. Such courses will inevitably be multifaceted—embracing the subject matter; developmental considera-

tions, such as age-appropriateness; methodological issues, such as lesson structures, balance, objectivity; and the nature of the teaching process itself as a vital component of what is being taught. Opportunities for future teaching innovations are boundless.⁷ □

1. Lisa A. Goodman, et al., "The Threat of Nuclear War and the Nuclear Arms Race: Adolescent Experience and Perceptions," *Political Psychology*, 4, no. 3 (Sept. 1983), pp. 501-30.

2. Roberta Snow and Lisa Goodman, "A Decisionmaking Approach to Nuclear Education," in *Education and the Threat of Nuclear War*, special issue of *Harvard Educational Review*, 54, no. 3 (Aug. 1984), pp. 321-28; William Beardslee, M.D., and John Mack, M.D., "The Impact of Nuclear Developments on Children and Adolescents," *Psychological Aspects of Nuclear Developments*, Task Force Report 20, American Psychiatric Association, Washington, D.C.

3. From "Teacher Education in the Nuclear Age," Report of the Education Seminar, Summer Institute on Global Studies, Augsburg College (June 1984).

4. Roberta Snow is lecturer in education, Harvard Graduate School of Education, Harvard University; research associate, Nuclear Psychology Program, Harvard Medical School; and president of Educators for Social Responsibility.

5. Roberta Snow, keynote address, annual meeting of Educators for Social Responsibility, June 23, 1984.

6. *Ibid.*

7. Two important publications in this field are *Education and the Threat of Nuclear War* cited above and *Education for Peace and Disarmament: Toward a Living World*, a special issue of *Teachers College Record*, 84, no. 1 (Fall 1982).

Interdisciplinary programs

by Dick Ringler

THE INTERDISCIPLINARY nature of both the nuclear problem and its solution have recently prompted the development and implementation of many inter- or multidisciplinary courses at American colleges and universities. One example, which has attracted large numbers of students and has had significant public attention, is my course, "Perspectives on Nuclear War," at the University of Wisconsin at Madison.

Since very few individuals are expert, authoritative and up-to-date on all aspects of this protean subject, interdisciplinary courses tend to be collaboratively designed and taught. The teaching team can consist of a single coordinator and a very large number—perhaps 30 or more—guest speakers, as at Wisconsin. Or it may be two or three core faculty—ideally a natural scientist, a social scientist and a humanist—who do most of the lecturing themselves, with occasional guests. Guest speakers can and should include local and regional political and religious leaders, who will usually waive a fee.

Advantages of the first arrangement are:

- expert, authoritative coverage of any given topic;
- expression of widely diverse political and moral opinions;
- variety in character and style of presentation;
- need for only one faculty member, the coordinator,

to receive teaching credit. (Indeed, he or she can be a volunteer.)

Major disadvantages are:

- a tendency toward a lack of continuity and coherence;
- a tendency to rely for evaluation on multiple-choice, machine-graded exams. (The second arrangement has these advantages and disadvantages to a lesser degree.)

The sequence in which subjects and ideas are introduced in interdisciplinary courses is, in theory, very important for pedagogical reasons. The course designer(s) must have a clear conception of what is the most natural and coherent order. In practice, of course, any arrangement that actually works is self-justified, and one can always learn from mistakes and reorder the whole sequence next time.

The title of a course, and how it is framed in the opening lectures, are also highly important. When first planning the Wisconsin course, I intended to start it with a "humanistic" component: prophetic and apocalyptic literature, moral and religious values and so on. As a matter of both intuition and judgment, I believed this to be the first context to establish. Colleagues from the physical and social sciences, with whom I subsequently consulted, strongly disagreed. They convinced me to adopt a quite different—and much more satisfactory—arrangement. The final structure of the course comprised six major categories: Introduction, Nuclear Science and Nuclear Weapons, Consequences of the Use of Nuclear Weapons, Visions and Nightmares, Paths toward

War, and Paths toward Peace. There were, of course, numerous sub-sections.¹

This outline provides one kind of organizational model for multi- or interdisciplinary courses, a model that has proved to work well in practice. But it by no means exhausts the many possible approaches. Faculty who organized a course called "The Nuclear Predicament" at the School of the Ozarks took a quite different—but equally appropriate—tack:

In planning this course, we believed it was crucial for students to understand at the outset what is known about the psychological effects of living under the nuclear shadow. If students were to be compellingly engaged in the nuclear issue, they had to start by identifying their own psychological and emotional centers. . . .

The opening class, then, was given to informal small-group discussions, with faculty and students exploring their feelings about nuclear war. These discussions marked a turning point for students. . . . Once they realized the magnitude of nuclear destruction, and coupled that to their unconsciously enforced ignorance of it, they seemed at once more concerned and receptive to learning.²

One can also begin at Hiroshima on August 6, 1945, and develop a historical context. This is done at Hobart and William Smith Colleges, in an interdisciplinary course called "The Nuclear Peril." The point is, of course, that in arranging the sequence of presentations in interdisciplinary courses, there is no "universal ideal" order, only a "local pragmatic" one.

INTERDISCIPLINARY courses should be designed to meet the highest professional standards of accuracy and objectivity. But since they are normally introductory in nature and are intended to impart information to as large a number of students as possible, it is essential that they be "packaged" and "marketed" in such a way as to be attractive and accessible to a wide student public. They should be consistently interesting, lively and provocative, taking full advantage of suitable audio-visual materials. They should avoid excessively long, complicated or overlapping reading assignments. They should be widely publicized on the campus by whatever means exist. And—very important—they should be incorporated into the curriculum where they will satisfy, for students who enroll in them, as wide a range of departmental and general college requirements as possible.

Students will sign up for courses of this kind from a mixture of motives: intellectual curiosity, social concern, professional development. Many go through a phase of acute anxiety, even anger, in the early stages of the course, when the enormity of the problem, and the extreme difficulty of imagining any effective individual action, begin to dawn upon them.³ These distressing (but quite appropriate) emotions can be processed in the weekly discussions, if the course is sectioned, or in ad hoc student-generated support groups. And even when left entirely on their own, students

pass through this phase unscathed and are the stronger for it. Some students find it both intellectually stimulating and psychologically beneficial to undertake term projects which are more "active" than the traditional research paper. The Wisconsin course encourages projects in which the student carries the educational process into the larger community.

A highly innovative and ingenious interdisciplinary course, which automatically includes a potential "emotion-processing" component, as well as a guarantee of serious intellectual engagement, has been developed by Bud Hudson and colleagues at Carroll College in Waukesha, Wisconsin. Its content is fairly standard; what makes it unique is that the students, throughout the course, role-play members of Congress as they debate a multifaceted congressional resolution. There are hearings, testimony of invited expert witnesses, films and subcommittee meetings which focus on "understanding, modifying, and eventually voting on" the resolution. "The objective of the course is to provide for students a framework and method by which they will be able to come to an understanding of the salient features of and take a position on nuclear and conventional armaments issues in the context of congressional decision-making." As imaginative and effective pedagogy, this can hardly be bettered.

In designing and instituting interdisciplinary lecture courses, full advantage should be taken of all opportunities for public education and community outreach. The University of Wisconsin course, for example, is scheduled for 5:00 P.M., Monday, Wednesday and Thursday, to enable interested members of the community, including high school teachers and students, to participate. By special arrangement, they may do so on a walk-in basis. Furthermore, the lectures in the course have been recorded by Wisconsin Public Radio and broadcast statewide three times as part of a series called "University of the Air."

One last type of initiative occupies a position halfway between "interdisciplinary courses," as described here, and "institution-wide programs," as described below. At South-eastern Massachusetts University, students can immerse themselves in a "nuclear arms race semester" by signing up for three simultaneous comprehensive "cluster courses" (Freshman Composition; History of the United States since 1945; Science, Technology, Society) and an "integrating seminar" (The Nuclear Arms Race) which furnishes supplemental interdisciplinary information and serves to pull everything together. Such a program, which builds on existing courses, is very economical. Inclusion of a writing component has a number of obvious advantages. And it provides a shared community in which students can deal with psycho-emotional issues.⁴ □

1. For a complete description of this course see *Academe: Bulletin of the American Association of University Professors*, 69, no. 6 (Nov./Dec. 1983), pp. 11-15.

2. See the letter from Phillip Carman and Stephen Kneeshaw, *Bulletin* (Feb. 1984) p. 53.

3. See Morton S. Perlmutter and Dick Ringler, "Nuclear Anxiety: Social Symptomatology and Educational Therapy," forthcoming in a special issue of *Marriage and Family Review* devoted to families and the threat of nuclear war (ed. Marvin B. Sussman and Teresa Marciano).

4. For a detailed description of this program see "Unified Studies Programs: Beyond the Multidisciplinary in Nuclear Education," obtainable from Shaleen Barnes, Instruction Librarian, Southeastern Massachusetts University, North Dartmouth, Massachusetts 02747. For synopses of several interdisciplinary courses, see "Summary of Courses on Nuclear War," available from United Campuses to Prevent Nuclear War (UCAM). A packet of syllabuses from 20 representative courses is available from the Federation of American Scientists. The fourth edition of *Peace and*

World Order Studies: A Curriculum Guide reprints a number of syllabuses in accessible form. Other interdisciplinary courses, with innovative features, are: "Nuclear War and Its Prevention" (Robert R. Holt, Department of Psychology, New York University, New York 10003); "Nuclear War" (David W. Blight, Department of History, North Central College, Naperville, Illinois 60566); "Nuclear Arms: An Interdisciplinary Framework for Decision Making" (Gloria J. Borden, Department of Speech, Temple University, Philadelphia, Pennsylvania 19122).

Institution-wide programs

by Timothy J. O'Keefe

AMERICAN COLLEGES and universities are addressing the issue of war and peace, and in particular the threat of nuclear conflict, in a variety of institution-wide programs. The approach, the duration, the particular emphasis, and the degree of public involvement vary with each institution. Much depends on the educational philosophy of the school, the resources available, the commitment of the administration, and the willingness of the faculty to develop appropriate courses. This article briefly describes a number of successful models which range from one-term, consciousness-raising programs to permanent centers with special faculty.

A number of colleges, from Dartmouth in the East to the University of Santa Clara in the West, have sponsored campus-wide short-term programs on the nuclear threat. Santa Clara undertook one of the most intensive efforts in the form of an Institute on War and Conscience during the fall term, 1982. A faculty committee organized a comprehensive program to make the issue of war and peace the dominant theme of the term for students, faculty and staff. The University president opened the Institute at a faculty convocation with an address on the incompatibility of the purpose of a university and research on weapons of destruction.

The core program for undergraduates consisted of four specially designed multidisciplinary courses: "The Phenomenon of War," "Arms Control," "War in the Christian Moral Tradition," and "Constructive Alternatives to Destructive Weaponry." Students could enroll in one or more of these courses or elect any of about 20 auxiliary courses. Each auxiliary course was voluntarily prepared by faculty and addressed some aspect of the Institute theme from the perspective of a particular discipline. They ranged from "Moral Choice in the Nuclear Age" (religious studies) to "Anthropology of War" (anthropology) and "Politics of War in America" (history). About half of the courses are now part of the University's regular offerings. In all, 10 percent of the faculty participated and about 600 students enrolled in at least one Institute course.

The second major component of the Santa Clara Institute was an extensive program of complementary evening presentations. A series of seven films, each followed by a discussion guided by a faculty member, dramatized the experience of war. Two theatrical productions were sponsored by

the Institute: the Department of Theater Arts produced a Greek tragedy, and a local actor presented a modern play about the traumas of a returning Vietnam veteran.

In the first of a series of panel discussions, four prominent theologians discussed the morality of nuclear warfare. Another panel of former military officers reflected on their combat experiences, and a group of industrialists and economists discussed the role of the defense industry in the surrounding "Silicon Valley." An evening was devoted to a reading and discussion by Denise Levortov of her poetry about war. In a lecture series, Dr. Helen Caldicott, Senator Alan Cranston, General James Shelton, McGeorge Bundy and other speakers discussed the threat of nuclear war from a variety of perspectives. The University opened these events to the neighboring community without charge, and some 1,200 people attended individual presentations.

A wide-reaching effort to introduce the issue of nuclear war to students was attempted by Southern Methodist University. As part of its 1983 academic orientation, incoming freshmen viewed a film about the University's responsibilities on the nuclear issue and read Jonathan Schell's *The Fate of the Earth*. Campus orientation activities included discussions of nuclear deterrence by the School of Engineering and Applied Science and a mock trial of President Truman for dropping the bomb on Japanese civilians. Students were called on to act as jurors and later discuss a nuclear freeze resolution at a town hall meeting.

Ohio Wesleyan University developed a similar orientation program for the fall of 1984. Freshmen were required to read John Hersey's *Hiroshima* in preparation for their English placement examinations. Students were then encouraged to enroll for credit in a weekly lecture series and in master seminars on warfare as part of the new program called the National Colloquium.

MANY UNIVERSITIES have taken a different approach, establishing permanent programs to study international conflict and ways of controlling destructive weaponry. These are mostly larger institutions, some with heavily endowed programs designed to attract a community of senior scholars.

Stanford's Center for International Security and Arms Control has been a model for such programs. It offers colloquiums and conferences for its more than 40 scholars on aspects of arms control seen in a global perspective. The idea for the Center originated in a multi-disciplinary under-

graduate course on arms control taught by several faculty members beginning in 1970. Center faculty continue to teach this course as well as advanced seminars.

Harvard, MIT, Ohio State University and the University of Illinois, Champaign-Urbana, also have such programs. Illinois' Office of Arms Control, Disarmament and International Security is attempting to more than double its current offering of eight courses, including three in general education and five in advanced studies from physics, political science, economics, history and Asian studies. The Office supports a number of special seminars and a program of public lectures. Syracuse University's Program in Nonviolent Conflict and Change offers a degree through the School of Citizenship and Public Affairs. One of its three major focuses is disarmament and arms control.

A somewhat different emphasis is found in other colleges which have peace studies programs. Many, although by no means all, of these are church-related. The University of Missouri at Columbia offers a peace studies emphasis in the College of Arts and Sciences' Interdisciplinary Degree Program. It draws on a wide variety of academic areas and promotes community education programs on issues of war and peace. Berkshire Community College, a two-year institution in Pittsfield, Massachusetts, has offered a concentration in Peace and World Order Studies since 1982. Students following this plan must complete four peace studies courses along with their other requirements.

Manchester College, affiliated with the Church of the Brethren, established the first peace studies program in the country in 1948. Its interdepartmental Peace Studies Institute and Program in Conflict Resolution, in addition to courses leading to a degree, sponsors film series and other peace-related activities. Goshen College, a Mennonite school, and Earlham College, a Quaker foundation, both of which offer peace studies, co-sponsor annual conferences on peacemaking with Manchester College. Earlham offers students the chance to major or co-major in its Peace and Global Studies Program.

Goshen's Peace Studies Program has minors and co-majors. It consciously tries to influence faculty to emphasize peace themes in all courses. Juniata College in Pennsylvania has a similar 10-year-old Peace and Conflict Studies Program. St. Bonaventure University, in keeping with its Franciscan heritage, committed itself to a peace studies program in 1981. It offers courses and advanced seminars leading to a minor. Relatively few undergraduates pursue majors and minors in this area, but many students take individual offerings as electives.

For further information on these programs write to:

Donald Lathrop, Coordinator
Peace and World Order Studies
Berkshire Community College
West Street
Pittsfield, Massachusetts 01201

George Lopez

Peace and Global Studies Program
Earlham College
Richmond, Indiana 47374

Don Blosser
Director of Peace Studies
Goshen College
Goshen, Illinois 46526

Edward Kolodziej
Office of Arms Control, Disarmament
and International Security
University of Illinois at Champaign-Urbana
361 Illinois Hall
Urbana, Illinois 61801

M. Andrew Murray
Director of PACS
Juniata College
Huntington, Pennsylvania 16652

Kenneth Brown, Director
Peace Studies Program
Manchester College
North Manchester, Indiana 46962

Director
Peace Studies Program
University of Missouri at Columbia
Columbia, Missouri 65211

Richard Elias
Department of English
Ohio Wesleyan University
Delaware, Ohio 43015

Kathleen Uhler, Coordinator
Peace Studies
St. Bonaventure University
St. Bonaventure, New York 14778

Timothy J. O'Keefe, Director
Division of History and Social Sciences
University of Santa Clara
Santa Clara, California 95053

Judith Pitney
Assistant Provost
Southern Methodist University
Dallas, Texas 75275

John W. Lewis, Director
Center for International Security
and Arms Control
320 Galvez Street
Stanford, California 94305

Neil Katz, Director
Program in Nonviolent Conflict and Change
Syracuse University
249 Physics Building
Syracuse, New York 13210

Inter-institution programs

by Harmon C. Dunathan

IN MOST INSTITUTIONS the effort to provide a broader, more effective, lasting nuclear education component for the undergraduate curriculum must build on a very small base of experienced faculty. Thus, a cooperative effort among neighboring institutions is a natural response to the problems of faculty and curricular development.

Formal inter-institutional cooperation occurs in groupings as geographically broad as the Associated Colleges of the Midwest or as close as the five-college association in Massachusetts. Such associations greatly enrich the participating institutions but seldom reach the full potential of their shared intellectual resources. Different missions, different students and a perception of unequal quality all are barriers to effective cooperation. Whenever inter-institutional cooperation involves several departments, these difficulties are multiplied. And when the subject is war, peace and national security, the emotional and polarizing power of the issues is a further challenge to cooperation.

The Five Colleges, Incorporated consortium consists of four colleges—Amherst, Hampshire, Mount Holyoke and Smith, plus the University of Massachusetts. All five institutions are within a six-mile radius encompassing Amherst, Northampton and South Hadley, Massachusetts. These schools have worked together in many areas since the 1950s, and today a multitude of cooperative ventures take place under the Five Colleges umbrella; each year more than 4,000 students enroll in courses away from their home campuses.

In this setting a group of faculty concerned with peace and security issues organized an informal Five College faculty seminar in 1980. Interest grew and early in 1982 a Project on Peace and Disarmament was established with support from the Five Colleges, Incorporated, budget. A member of the Hampshire faculty served half-time as coordinator. Activities in that first year included a series of four two-day visits by experts in deterrence theory. Each expert gave a general lecture, visited classes and led a faculty seminar. The program also sponsored a faculty development seminar which involved 45 persons, including several from local peace organizations. The seminar focused on goals and problems in teaching in this field and possibilities for curriculum development.

During 1983 outside funding was sought for a more ambitious program, including a new Five College faculty appointment. Such appointments are common, a visiting professor being based on one campus but normally teaching at others. Late in the year the Ford Foundation funded the Five College proposal providing for the new appointment as well as visitor, workshop and seminar funds, all for a three-year period.

In January 1984 a second faculty workshop focused on interdisciplinary approaches to teaching about nuclear war. The speaker series continued through the year and a new, Ford-supported faculty seminar, "Perspectives on the Arms Race," attracted 30 participants for a week in June.

This expanded Five College program will have its most immediate effect on faculty development but will also allow faculty members to discuss pedagogical and curricular problems as the offerings in this area are increased. There is as yet no common understanding among the teachers involved as to the eventual curriculum or program goals, nor even about the curriculum areas most in need of development. But a sense of collegiality already exists, and with increased contact among faculty has come a greater awareness of the great diversity of views and backgrounds represented in the program. Clearly, agreement on goals will require generosity and compromise.

The rapid development of the Five College Program has depended on the cooperative tradition and structures, the enthusiastic help of the administration, and the strong support of the presidents and deans of the five institutions. One dean teaches regularly in this area, and several of the presidents have a strong personal commitment to the project.

Student interest remains high, with new courses attracting sizeable enrollments. But this interest may not last, and there is some feeling of the need to move faculty activities quickly toward curricular development.

A related Five College International Relations program is several years older than the Peace and International Security project. The former program also grew out of a faculty seminar and was able to make a Five College faculty appointment several years ago. It now lists more than 150 courses in and closely related to International Relations and is seeking formal "certificate" (minor concentration) status in the Five Colleges. There is considerable overlap in faculty and courses between the two programs.

THERE ARE a number of other university programs that serve, more or less formally, as a resource for faculty from area institutions. Ohio State University's Mershon Center has sponsored the Ohio Arms Control Seminar for many years. More than 40 faculty from some 20 Ohio institutions attend an annual seminar at Ohio State and otherwise cooperate in curricular development. Programs at MIT and at Harvard have provided the faculty for an intense two-week summer workshop on nuclear weapons and arms control. In 1983 and again in 1984 this was attended by some 50 faculty, primarily from the East. (For information about the activities of the Mershon Center contact Charles F. Hermann, Mershon Center, The Ohio State University, 199 West 10th Avenue, Columbus, Ohio 43201. For details about the MIT-Harvard Workshop on Nuclear Weapons

and Arms Control, contact William Durch, MIT, 292 Main Street, 6th floor, Cambridge 02142.)

I know of only a few cooperative efforts among smaller institutions. Bryn Mawr and Haverford Colleges alternate in assuming responsibility for a visiting faculty appointment and for arranging a lecture series on nuclear issues.

This very limited survey suggests that few existing con-

sortiums of colleges and universities are active in this study area. Nor have I discovered many informal arrangements among institutions whose geography would allow cooperation. It may be that these arrangements will develop in time, but the most useful current model is that of a university program serving as a resource for faculty from smaller institutions. □

A system-wide program

by G. Allen Greb

THE INSTITUTE on Global Conflict and Cooperation is an interdisciplinary, system-wide unit of the University of California which promotes and conducts academic programs on all campuses. In response to separate initiatives put forward by then University President David Saxon and former Governor Edmund G. Brown, Jr., and several independent student proposals, the regents of the University formally established the Institute in June 1983.

The focus of the program is twofold: It is concerned first with conflict situations severe enough to threaten escalation into a large-scale war, and second with various forms of international cooperation to meet problems that threaten global security. The primary, but not exclusive, emphasis is on threats and avoidance of nuclear war. The Institute will concentrate on identifying the causes of international conflicts as well as the ideas, institutions and policies that can help eliminate or reduce them.

The program is divided between individual projects generated by a normal proposal solicitation process and supported by a number of modest grants, and other activities planned by the Institute's central executive office. The central office is staffed by the director, Herbert F. York of the University of California at San Diego, and two assistant directors. Liaison officers on each campus assist the central office, and a steering committee, consisting of University faculty and students and representatives of other California institutions, oversees the entire operation. An advisory panel, to consist of distinguished citizens, will be appointed during the 1984-1985 academic year by the current University of California president, David Gardner. The panel will make an annual review and assessment of Institute activities.

There already exist several other organized research units and special programs in the University which carry out academic activities that provide some overlap with Institute concerns. Examples are the Institute of International Studies and the Energy and Resources Group at Berkeley; the Center for International and Strategic Affairs at Los Angeles; and the Science, Technology, and Public Affairs Program at San Diego. The Institute on Global Conflict and Cooperation works closely with these groups and has supported the establishment of new local units at the Irvine, Santa Barbara and Santa Cruz campuses.

Many other organizations throughout the country and the world engage in similar activities. These include organizations commonly known by such names as "peace research institutes" and "strategic studies institutes." The California Institute will seek to open broad-based relationships with as many of these groups as possible, but it will place special emphasis on those in California and the western United States.

Examples of the kinds of activities already begun or planned by the Institute for the near future follow:

- *Grants program.* Since the institute began operation, individual research and teaching projects have been a key element in its overall program. It currently supports over 40 such projects on eight of the university's nine campuses, involving faculty and students in more than a dozen disciplines.

- *Dissertation fellowships.* The Institute also supports seven pre-doctoral fellows working in the areas of anthropology, international relations, political science, psychology and sociology as a special component of its grants program. In addition to providing basic support for their dissertation research, the Institute brings all of the fellows together for two-day colloquia several times a year. This enables the fellows to exchange ideas and information and to hear special lectures by experts in relevant fields.

- *Summer Seminar on Global Security and Arms Control.* This is a two week annual program conducted on various campuses of the University on a rotating basis. It brings together approximately 30 faculty and graduate student participants from the University of California system and from other universities and colleges in the western United States to provide them with an intensive education on issues surrounding the nuclear question. The Sloan Foundation provided full support for the 1984 seminar and will do the same for the 1985 effort.

- *Media library.* The Institute has a central library of films and tapes that deal with a wide spectrum of topics. These materials are available for use within the University of California system. The Center for International and Strategic Affairs at the Los Angeles campus manages the collection on behalf of the Institute.

- *The lectureship program.* Beginning in the 1984-1985 academic year, the Institute will sponsor lectureships for

several senior scholars. During their month-long tenure, these scholars will visit each of the University of California campuses. They will present general lectures, hold graduate-level seminars, speak to faculty colloquiums and give occasional talks in undergraduate courses.

- *Publication series.* There are plans for a series of occasional papers commencing in 1984-1985. This series will consist primarily of manuscript, resulting from the Institute's grants program. A monograph series in conjunction with the University Press is also planned.

- *Peace research workshop.* The Institute conducted in

the fall of 1984 a three-day workshop in Monterey, California, that brought together University faculty and internationally recognized peace researchers. The purpose was to clarify an agenda for peace research, focusing particularly on the Institute theme of nuclear war prevention.

The Institute publishes several brochures detailing its numerous activities and circulates a newsletter three times each academic year. For these publications and for further information, contact: IGCC Central Office, c/o Susan Greer, Mail Code Q-060, UC San Diego, La Jolla, California 92093. □

Resource guide

Bibliographies, directories and guides

American Peace Directory 1984, Melinda Fine and Peter Steven, eds. (Ballinger, 1984). A project of the Institute for Defense and Disarmament Studies, this book lists 1,350 national and local peace groups. The 1986 directory, currently in preparation, will be more comprehensive and will include a guide to literature on arms and disarmament and an overview of peace movement strategies.

The Atomic Papers: A Citizen's Guide to Selected Books and Articles on the Bomb, the Arms Race, Nuclear Power, the Peace Movement, and Related Issues (Scarecrow Press, 1984). Succinct annotations for 800 books published since 1945 and approximately 300 periodical articles since 1980 on every facet of the nuclear problem. A concluding chapter describes over 100 novels and stories with nuclear themes published since 1945.

Bibliography of Nuclear Education Resources 1984, Susan Alexander, ed. (Educators for Social Responsibility, 1984). Fully and accurately annotated bibliography covering a wide range of topics.

Guide to Organizations (Educators for Social Responsibility, 1984). A guide to agencies and organizations of many different kinds and perspectives.

1984 National Directory of Audiovisual Resources on Nuclear War and the Arms Race, Karen Sayer and John Dowling, eds. (University of Michigan Media Resources Center, 1984). Annotated alphabetical list with synopses of content, evaluations and rental information.

Nucleography: An Annotated Resource Guide for Parents and Educators on Nuclear Energy, War, and Peace, Jacqueline Barber, Gigi Bridges, and Cary Sneider, eds. (Nucleography [2847 Fulton Street, Berkeley, California 94705], 1982). Topics covered include: informational materials, psychology and teaching methods, curriculums, books for children, audiovisual resources, periodicals and resource lists, organizations.

Repertory of Disarmament Research (United Nations Institute for Disarmament Research, 1982). International reference and guide to bibliographies, research papers, institutions, periodicals and other sources of information on disarmament.

Research Guide to Current Military and Strategic Affairs, William

M. Arkin (Institute for Policy Studies, 1981). Written by one of the authors of the *Nuclear Weapons Databook*, this guide is essential for anyone attempting to extract information from government agencies and documents.

War and Peace in Literature, Lucy Dougall, ed. (World Without War Publications, 1982). An annotated list of poetry, prose and drama, including anthologies and reference works and a chart of literature keyed to specific wars. Does not include science fiction.

Basic textbooks and readers

The bibliographies in the previous section provide access to a large number of works that can be used as textbooks or readers. The following is a list of a dozen of the most general and important works.

The Aftermath: The Human and Ecological Consequences of Nuclear War, Jeannie Peterson, ed. (Pantheon, 1983). A landmark publication in which a number of authorities appraise the ecological and social implications of nuclear war.

The Fate of the Earth, Jonathan Schell (Knopf, 1982). This very readable and influential work about the nuclear predicament has already become a kind of classic. It and *Living with Nuclear Weapons* could serve as companion volumes—complementary in the information they provide, yet sharply contrasted in their perceptions of the problem and its possible solutions.

In a Dark Time: Images for Survival, Robert Jay Lifton and Nicholas Humphrey, eds. (Harvard, 1984). This anthology of short extracts will prove useful as a reader on the human and spiritual dimensions of nuclear war.

Living with Nuclear Weapons, Harvard Nuclear Study Group (Bantam Books, 1983). Thorough, clearly written overview of the arms race and various options for arms control. Emphasizes the need to be realistic about the present situation and accommodate ourselves to the continuing existence of nuclear weapons. See *The Fate of the Earth*.

National Security and the Nuclear Dilemma: An Introduction to the American Experience, Richard Smoke (Addison-Wesley, 1984). A thorough and balanced overview of the history of the nuclear arms race, with special focus on the role of nuclear weapons and arms control in U.S. national security policy.

Nuclear Weapons and Nuclear War: A Sourcebook for Health Professionals, Christine Cassel, M.D., Michael McCally, M.D. and Henry Abraham, M.D. (Praeger Scientific, 1984). Currently the best comprehensive reader from the point of view of medicine and human biology. Though it was assembled by and for health professionals, it can be read with profit by others. Covers a wide range of not strictly medical subjects.

Science, Technology, and the Nuclear Arms Race, Dietrich Schroer (John Wiley and Sons, 1984). This superb textbook offers a comprehensive survey of the nuclear arms race from a technological perspective, seeking to impart "technical literacy" to non-scientists. Schroer is a pioneer in the development of courses exploring nuclear arms issues from a technological perspective, and this text is based on his very successful courses at the University of North Carolina.

The Soviet Union Today, James Cracraft, ed. (Bulletin of the Atomic Scientists, 1983). Twenty-six chapters, written by experts but addressed to the general reader, on major aspects of Soviet life today.

Toward Nuclear Disarmament and Global Security: A Search for Alternatives, Burns H. Weston, ed. (Westview Press, 1984). A reader containing 45 expert essays in four sections: Confronting the Nuclear Crisis, Rethinking Some Basic Assumptions, Opting for Nuclear Disarmament, and Pursuing Alternative Global Security.

Understanding Nuclear Weapons and Arms Control: A Guide to the Issues, Teena Mayers (Education in World Issues, 1984). A thorough, concise and well-illustrated survey in simple language. Ideal for high school and some college courses.

Waging Nuclear Peace, Robert Ehrlich (State University of New York Press, 1984). Based on the author's highly successful course at George Mason University, this book is described by its publishers as "a clear and informative interdisciplinary survey of the issues surrounding nuclear war."

The War System: An Interdisciplinary Approach, Richard A. Falk and Samuel S. Kim, eds. (Westview Press, 1980). Essays by many authorities who approach the subject from a wide variety of angles: moral and philosophical, ethological and psychological, cultural and anthropological, sociological, socioeconomic, decisionmaking, internationalist, and normative.

Curriculums and curricular information

Decision Making in a Nuclear Age, Chris Austill, ed. (Halcyon House, 1983). A three- to twelve-week unit for high school students containing many things that could easily be adapted for use in certain college courses. Available from Educators for Social Responsibility.

FAS Syllabus Packet. A compendium of 20 selected course syllabuses from colleges and universities around the country, representing a wide range of disciplines. Each syllabus contains a course outline, reading and resource list, and description of assignments. Available for \$12.00 from the Federation of American Scientists.

Peace and World Order Studies: A Curriculum Guide, 4th ed., Barbara Wein, ed. This superb guide represents the state of the art in world order inquiry. It contains many course plans and syllabuses; 36 case studies of major academic programs in the United

States; and an annotated list of over 70 sources of seed money for peace and social justice education. Approximately 750 pages, \$14.95. World Policy Institute, 777 United Nations Plaza, New York 10017.

Perspectives: A Teaching Guide to Concepts of Peace, ed. Shelley Berman (Educators for Social Responsibility, 1983). Though intended mainly for primary and secondary schools, this work contains much information on resources and methodology that will be of interest to college teachers.

Riverside Church Disarmament Reader: A Model Course for Disarmament Studies, 2nd ed. (Riverside Church Disarmament Program, 1981). A wide-ranging collection of 61 articles and a course syllabus on the nuclear arms race to serve as a reader for college-level courses and adult study groups.

Summary of Courses on Nuclear War. Brief summaries of the contents of over 70 courses on nuclear war currently offered at colleges and universities in the United States. Available for \$1.50 from United Campuses to Prevent Nuclear War (see below).

Journals, magazines and newsletters

Arms Control Today. Monthly newsletter of the Arms Control Association (see below).

Bulletin of the Atomic Scientists. Contains authoritative but always readable and non-technical articles, reviews and correspondence. Published monthly except July and August.

The Defense Monitor. Published 10 times a year by the Center for Defense Information, this newsletter contains detailed factual analysis of current military issues, often contradicting popular impressions. For information contact the Center (see below).

FAS Countdown. Nine issues of this newsletter of the Federation of American Scientists Nuclear War Education Project were published between March 1982 and February 1983. They contain information that will interest educators in the field. Back issues are available from FAS (see below).

FAS Public Interest Report (Journal of the Federation of American Scientists). Each issue is devoted to a separate topic.

Foreign Affairs: An American Quarterly Review. The "establishment" journal in the field, published by the Council on Foreign Relations.

Foreign Policy. A quarterly published by the Carnegie Endowment for International Peace.

Forum. Quarterly newsletter of Educators for Social Responsibility (see below) and included in the basic membership fee. (\$10 low income or student, \$20 regular).

International Security. Sponsored and edited by the Center for Science and International Affairs at Harvard University and published quarterly by MIT Press.

Nuclear Times. Currently the most informative periodical about the anti-nuclear-war movement.

Survival. Bimonthly journal of the International Institute for Strategic Studies in London. Contains articles, documentation and book reviews.

UCAM Network News. Monthly updates on nationwide campus activities in the nuclear war and arms control areas, also information on available educational resources.

U.S. Naval Institute Proceedings. A monthly journal whose authors are primarily active naval personnel. Useful for keeping posted on how the military looks at nuclear issues.

Washington Report. Newsletter of the American Security Council (see below).

World Policy Journal. Published quarterly by the World Policy Institute (see below). Authoritative analyses of international affairs and arms race issues.

Miscellaneous educational resources

Arms Control Essay Contest. The purpose of the Gerard C. Smith Essay Contest of the Arms Control Association is to encourage innovative thinking and creative approaches to arms limitation and reduction. Annual prizes are awarded in each of three categories: post-graduate student or professional under the age of 30, college or university student and high school student. For information contact the Arms Control Association (see below).

Education and the Threat of Nuclear War. A special issue of the *Harvard Educational Review*, 54, no. 3 (August 1984). This collection includes articles by authors from different disciplines who approach the nuclear problem from their own disciplinary and personal experience; a series of "chronicles" describing the experiences of a wide cross-section of practicing teachers who deal with the nuclear threat in their classrooms; and an essay review of the leading curriculums hitherto formulated to address this complex problem.

Education for Peace and Disarmament: Toward a Living World. A special issue of the *Columbia University Teachers College Record*, 84, no. 1 (Fall 1982). Twenty-three educators and educational theorists, among them such notables as Elise Boulding, René Dubos, Robert K. Musil, Michael J. Nagler, Betty Reardon, Gene Sharp and Douglas Sloane, address themselves to Einstein's

challenge to develop "a substantially new manner of thinking." Also available as a book, *Toward a Living World* (Teachers College Press, 1984).

FAS Education Packet. Contains the following: a list of selected films and distributors; "Nuclear War is National Suicide," an FAS Public Interest Report on the effects of nuclear war; "Arms Limitation Initiatives"; "World Crisis in the Nuclear Age," a syllabus developed at the University of Minnesota; bibliographies on nuclear war and the arms race; and "Nuclear War is National Suicide" decals. Available for \$4.00 from the Federation of American Scientists.

FAS Nuclear War Education Project. This project has a number of resources dedicated to fostering public education on nuclear war: a monthly newsletter, *FAS Countdown* (publication suspended since February 1983), a syllabus packet, a graphics project, a speakers bureau and a correspondents network.

Nuclear Arms Education. A special issue of *Physics Today*, 36, no. 3 (March 1983). Articles by physicists, intended to provide background information for educating students and the general public about the issues involved in the threat of nuclear war.

Nuclear Education. A special issue of the *Journal of College Science Teaching*, 12, no. 5 (March/April 1983). Lengthy feature articles about eight groundbreaking courses around the country, briefer summaries of 46 others and reports on the nuclear education activities of the American Association for the Advancement of Science, International Student Pugwash, the Federation of American Scientists and United Campuses to Prevent Nuclear War. National Science Teachers Association, 1742 Connecticut Avenue NW, Washington, D.C. 20009.

Nuclear War Graphics Project. Among the various materials available from the Project, the resource slide packets "Nuclear War Graphics Package" (130 slides, \$15) and "Consequences of Nuclear War Graphics Package" (180 slides, \$20) are an invaluable source of illustrative materials for lectures. 100 Nevada Street, Northfield, Minnesota 55057.

Nuclear War: The Responsibility of the University. Packet of materials designed to persuade administrators that nuclear-education

courses represent an academically sound and growing area of study. Available from UCAM.

Nuclear Wearons: Concepts, Issues, and Controversies, ed. Betty Reardon, John Anthony Scott and Sam Totten. A special section in *Social Education*, 47, no. 7 (November/December 1983).

Proceedings of the Symposium, "The Role of the Academy in Addressing the Issues of Nuclear War, Washington, D.C.," March 25-26, 1983. (Hobart and William Smith Colleges, 1982). Proceedings of a conference organized by the provost's office at Hobart and William Smith Colleges, sponsored by the American Council on Education and the Association of American Colleges, and supported by grants from the Carnegie Corporation of New York and Rockefeller Associates.

Professional and other organizations and agencies

In general see the *American Peace Directory 1984* and the Educators for Social Responsibility's *Guide to Organizations*. The following list is highly selective and includes organizations and agencies which are likely to be of interest to post-secondary educators.

American Association for the Advancement of Science. Recently the council and board of directors of this national organization have taken increasing interest in nuclear arms and arms control issues.

American Civil Defense Association, P.O. Box 1057, Starke, Florida 32091. Publishes the *Journal of Civil Defense* which presents information relating to civil defense, the survival of free government and peace in the nuclear age.

American Physical Society. The Forum on Physics and Society of the APS sponsors sessions at APS meetings. These are likely to be of interest to non-physicists as well as physicists. For information contact APS, 335 East 45th Street, New York 10017.

American Security Council Foundation, 499 South Capitol Street, Washington, D.C. 20003. Educational institution which seeks to inform how a free society can meet the communist challenge through a strong defense.

Arms Control Association, 11 Dupont Circle NW, Suite 900, Washington, D.C. 20036. Nonpartisan national membership organization dedicated to promoting public understanding of effective policies and programs. Publishes a monthly newsletter, "Arms Control Today."

Center for Defense Information, 308 Capitol Gallery West, 600 Maryland Avenue SW, Washington, D.C. 20024. A project of the Fund for Peace, the Center is a non-partisan research organization that provides objective analyses of U.S. military programs for members of Congress and other decision-makers, the news media, key opinion leaders and private individuals.

Center on the Consequences of Nuclear War, 3244 Prospect Street NW, Washington, D.C. 20007. Established as a follow-up to the 1983 Conference on the World After Nuclear War, the Center cooperates with other organizations and the media in informing the public and decision-makers about the long-term climatic and biological effects of nuclear war. Video, film and printed information materials are available.

Committee on the Present Danger, 1800 Massachusetts Avenue

NW, Washington, D.C. 20036. Focuses on nuclear issues in regard to international policy.

Communicators for Nuclear Disarmament, 44 Hunt Street, Watertown, Massachusetts 02172. Association of artists, public relations specialists and others working on arms control projects.

Computer Professionals for Social Responsibility, P.O. Box 717, Palo Alto, California 94301. Dedicated to development and public presentation of expert analyses of society's use of computer technology, particularly as it contributes to the threat of nuclear war.

Concerned Philosophers for Peace, P.O. Box 42393, Portland, Oregon 97242.

Consortium on Peace Research, Education, and Development, Center for Peaceful Change, Kent State University, Kent, Ohio 44242. A nonprofit organization which links persons and institutions interested in scientific study, action-oriented research and education on problems of peace and social justice.

Council for a Livable World, 11 Beacon Street, Boston, Massachusetts 02108. A national group dedicated to the prevention of nuclear war through political activity and public education. In addition to publishing books and pamphlets, the Council operates a speakers bureau of physicists, chemists, physicians, arms control specialists and political scientists.

Educators for Social Responsibility, 23 Garden Street, Cambridge, Massachusetts 02138. A national nonprofit membership organization of teachers and administrators in schools and universities. The organization runs a national resource center which supports teacher training and curriculum development (mostly at the primary and secondary level) and issues numerous publications.

Federation of American Scientists, 307 Massachusetts Avenue NE, Washington, D.C. 20002. Founded in 1946, FAS has been a public interest lobby of scientists.

Ground Zero, 806 15th Street NW, Washington, D.C. 20005. Provides educational programs on the prevention of nuclear war and publishes occasional books.

Heritage Foundation, 214 Massachusetts Avenue NE, Washington, D.C. 20002.

High Technology Professionals for Peace, 639 Massachusetts Avenue, Room 316, Cambridge, Massachusetts 02139. A nonprofit organization of scientists, engineers and other technical workers concerned about the threat of nuclear war. Provides information about the impact of weapons systems on national security, the economy, the environment and society. Publishes a newsletter, "Technology and Responsibility"; various research publications; and a pamphlet, "Are You Considering a Career in the Defense Industry? Some Questions You Should Ask."

Institute for Defense and Disarmament Studies, 2001 Beacon Street, Brookline, Massachusetts 02146. A research center that seeks to educate the public about military forces and disarmament by answering requests for information and making its library available to interested persons. Publishes the "Arms Control Reporter" and other documents.

International Institute for Strategic Studies, 23 Tavistock Street, London WC2E 7NQ, England. Publishes two important annual reports, *The Military Balance* and *Strategic Survey*; the bimonthly journal *Survival*; and the series of Adelphi Papers.

International Philosophers for the Prevention of Nuclear Omnicide, 1426 Merritt Drive, El Cajon, California 92020.

International Physicians for the Prevention of Nuclear War, 635 Huntington Avenue, 2nd Floor, Boston, Massachusetts 02115. Seeks to alert physicians in all countries to the threat posed by nuclear weapons. Provides information to the public which shows that physicians would be unable to provide adequate health care in the event of nuclear war.

International Student Pugwash, 505B Second Street NE, Washington, D.C. 20002. A student-run, nonprofit educational organization which seeks to sensitize young people about science and society issues. The organization's programs examine the moral and practical dilemmas raised by imminent problems of science and technology in the nuclear age.

National Strategy Information Center, Inc., 111 East 58th Street, New York 10022. Publishes books and conducts programs in the field of international security affairs.

Nurses Alliance for the Prevention of Nuclear War, P.O. Box 319, Chestnut Hill, Massachusetts 02167.

Lawyers Alliance for Nuclear Arms Control, 43 Charles Street, Suite 3, Boston, Massachusetts 02114. An organization of legal professionals devoted to the study and airing of nuclear weapons issues.

Philosophers for Social Responsibility, Department of Philosophy, State University of New York at Stony Brook, Stony Brook, New York 11794.

Physicians for Social Responsibility, 639 Massachusetts Avenue, Cambridge, Massachusetts 02139. An organization of doctors committed to professional and public education on the medical dangers of nuclear weapons and nuclear war. Distributes books, pamphlets, newsletters, reprints and selected audiovisual materials.

Psychologists for Social Responsibility, Suite 216, 1841 Columbia Road NW, Washington, D.C. 20009.

Psychologists for Social Responsibility Task Force, California State Psychological Association, 2100 Sawtelle Boulevard, Suite 201, Los Angeles, California 90025.

Rand Corporation, 1700 Main Street, Santa Monica, California 90406. Founded by the Air Force as one of the original think tanks, Rand is a defense-oriented research institute that publishes a useful bibliography of its arms control publications.

Social Workers for Peace, 14 Beacon Street, Room 409, Boston, Massachusetts 02108.

Union of Concerned Psychoanalysts and Psychotherapists, 130 West 57th Street, New York 10019.

Union of Concerned Scientists, 26 Church Street, Cambridge, Massachusetts 02238. An organization of scientists, engineers and other professionals concerned about the impact of advanced technology on society. UCS has conducted independent studies on a range of questions related to nuclear energy, nuclear power plant safety and nuclear weapons.

United Campuses to Prevent Nuclear War, 1346 Connecticut Avenue, Suite 1019, Washington, D.C. 20036. UCAM is an organization of university students, faculty and staff working to end the nuclear arms race. Sponsors educational, lobbying and issue-oriented electoral activities. The national office and its monthly

newsletter serve as a clearinghouse for information on successful campus activities and analysis of nuclear issues.

United Ministries in Education, Peacemaking in Education Program, c/o Betty Reardon, Box 171, Teachers College, Columbia University, New York 10027. Among other goals, the Program seeks to enable teachers to recognize educating for peacemaking as part of their educational responsibility and to seek to translate peace education into concrete outcomes.

U.S. Arms Control and Disarmament Agency, Washington, D.C. 20451.

U.S. Department of State, 2201 C Street NW, Washington, D.C. 20520.

World Policy Institute, 777 United Nations Plaza, New York 10017. Works to develop and implement practical proposals for preventing and eventually eliminating war, achieving economic well-being, advancing human rights and establishing a healthy global ecology. Extensive publishing program.

World Priorities, Box 25140, Washington, D.C. 20007. Among the publications of this nonprofit research organization is Ruth Leger Sivard's annual report, *World Military and Social Expenditures*.

Young Americans for Freedom, Route 1, Box 1002, Woodland Road, Sterling, Virginia 22170. This organization for high school and college-age students advocates a strong national defense posture.

Professional development programs

MIT/Harvard Workshop on Nuclear Weapons and Arms Control. Funded by the Sloan Foundation, this intensive two-week summer program is designed to impart basic information about nuclear weapons and arms control issues to liberal arts college teachers east of the Rockies. For further information, contact William Durch, Massachusetts Institute of Technology, 292 Main Street, 6th Floor, Cambridge, Massachusetts 02142.

Scholar Diplomat Visitor Program. Sponsored by the Department of State, this program invites small groups of college and university faculty to Washington, D.C. to participate in week-long seminars exploring particular themes. Inquiries to the Office of Public Affairs, U.S. Department of State.

Summer Seminar on Global Security and Arms Control, University of California Institute on Global Conflict and Cooperation. Funded by the Sloan Foundation, this two-week-long summer program is designed to impart intensive instruction on issues surrounding the nuclear question to some 30 faculty and graduate student participants from the University of California System and other universities and colleges west of the Rockies. For further information, contact the IGCC Central Office, c/o Susan Greer, Mail Code Q-060, University of California at San Diego, La Jolla, California 92093.

Speakers

Many of the organizations and agencies listed above operate speakers bureaus or can supply the names of qualified speakers on subjects that fall within their purview. The authors of the

various articles in this supplement can also suggest speakers with- in their subject areas (and perhaps more widely). Two resources deserve special mention:

FAS Speakers List. This list of the names, addresses, phone num- bers and areas of expertise of more than 100 speakers from around the country is available from FAS (see above) for 50 cents. Some of the speakers are nationally known, others not.

Kistiakowsky Visiting Scholar Program. The American Academy of Arts and Sciences hopes to establish, beginning in the 1985-1986 academic year, a program to provide knowledgeable arms control and defense policy speakers to small liberal arts col- leges. Inquiries to Jeffrey Boutwell, American Academy of Arts and Sciences, 136 Irving Street, Cambridge, Massachusetts 02138.

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Offprints from the Bulletin

Common Sense and Nuclear Peace

by Jerrold Zacharias, Miles Gordon and Saville R. Davis

A concise, nontechnical discussion of the nuclear balance of terror; this essay offers an approach to a secure future. 16 pages.

Programs for Surviving Nuclear War: A Critique

by Herbert L. Abrams, John Lamperti, Jennifer Leaning and Matthew Leighton

Can civil defense programs protect civilians from nuclear weapons? Four experts present a critical review of present plans. 16 pages.

Space Weapons

by Richard L. Garwin and John Pike, Yevgeny P. Velikhov
U.S. and Soviet scientists examine the technological, strategic and political implications of "Star Wars" defense. 16 pages.

Resource Paper on the U.S. Nuclear Arsenal

by William M. Arkin, Thomas B. Cochran, Milton M. Hoening

A thorough examination of the present and projected U.S. nuclear arsenal. 16 pages.

Nuclear War: A Teaching Guide

edited by Dick Ringle

Educators from a variety of academic fields discuss their efforts to integrate concerns about nuclear weapons into their curriculums. 32 pages.

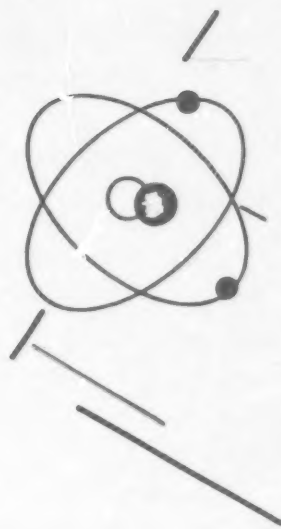
Nuclear Winter: A Forecast of the Climatic and Biological Effects of Nuclear War

by Anne Ehrlich

A report on the conference on long-term worldwide biological consequences of nuclear war, which presented new evidence about the effects of nuclear explosions on the Earth's atmosphere, climate and ecosystems. 16 pages.

Prices per offprint copy: 5-9 copies, 50¢; 10-49 copies, 45¢; 50-99 copies, 40¢; 100 or more copies, 35¢. Write the Bulletin for more information on larger bulk orders.

Only prepaid orders accepted. Checks are payable to the Bulletin of the Atomic Scientists. Allow four weeks for delivery. Mail to the Bulletin, 5801 S. Kenwood, Chicago, Illinois 60637.



Educating For Responsibility In a Nuclear Age

By Tony Wagner

“The unleashed power of the atom has changed everything save our modes of thinking . . .”

Albert Einstein

While some teachers believe that they cannot or should not try to deal with the nuclear issue in schools because of the complexity and the often controversial nature of the subject, a growing number of educators and parents are convinced that students now require a different kind of education for the nuclear age. Adults are realizing that they must respond to quiet but increasing expressions of students' despair such as comments like: “Why should I study for this test? We might all be blown away tomorrow.”

Many teachers would agree with the suggestion of the National Commission on Excellence in Education that students should be encouraged to achieve high academic standards, but that the key pedagogical question of the 1980s may be: “How can we nurture students' sense of hope and faith in the future so that they will want to strive for excellence?”

Nuclear age education raises many difficult questions: What aspects of the nuclear issues should be taught in schools, when, and by whom? What materials and questions are appropriate for students of different ages? How do teachers deal with their own biases when teaching the issues? What kinds of support and special training do educators need to take on these new and difficult topics? What is the role of parents and school boards in educating themselves and in helping decide what approaches to nuclear education are appropriate for their local communities? Finally, how can adults best communicate to students a belief in the future and in possibilities for change?

Although a great deal remains to be discovered about how education must be organized to best meet the challenges of the nuclear age, I would like to suggest four basic principles involving the teaching of basic skills that educators may want to consider.

1. Critical and Creative Thinking

Recently I was discussing contemporary world affairs with a group of tenth and eleventh graders. I asked them how many thought that citizens in our society could effect change. Twelve out of 16 students felt that there was nothing they would be able to do as adults to influence government policies. Not one student could think of any movement for social change in U.S. History that citizens had initiated. Women's suffrage, the abolitionist movement, the labor union movement, the civil rights movement—all these were no more than a series of names, dates, and events that they had memorized for tests and then forgotten.

Getting “schooled” is a passive experience for many young people, often requiring them to memorize more frequently than asking them to think. Too often students become consumers of information rather than creators of ideas in the classroom. They rarely are asked to analyze political and social problems or to think for themselves. Teachers sometimes hesitate to wander from the safe confines of textbooks. Thus controversy rarely enters the classroom.

If we sincerely want to educate students to cope with a nuclear technology that has devastating potential, then our first commitment in schools would be to develop students' abilities to critically analyze political and social issues and to think creatively about different possible solutions. We can begin to do this within most existing curricula by allowing more time for students to ask questions, to explore contemporary issues, and to think and write about problems that do not have simple or prescribed answers.

2. Idealism and the Will to Act

All the best intellectual training that schools can provide means little if students have not also developed ideals and a capacity to act on their convictions. I believe that students and adults can become "co-collaborators," to borrow a phrase from Piaget, of some aspects of educational decision-making. Students can help select and be responsible for many basic governance rules and procedures in schools.

Students need opportunities to make some decisions and also to say what they think in the classroom. They can be given choices of assignments, within certain limits, and asked to take stands, which they should defend in some way either by writing or discussion. In English classes, for example, students could write editorials expressing their point of view on topics they choose and then read them aloud for discussion in class. Students' opinions also can be solicited and seriously considered in course evaluations.

3. Knowledge of our Global Interdependence

The ability to think critically, and frequent practice in expressing well-thought-out opinions, will be of limited help to students who cling to an ethnocentric view of the world. Students must understand that biologically, economically, and socially, the fates of all nation-states are now inexorably intertwined. No country will win World War III. And the planet's resources are fragile and finite. We must learn to work together to preserve them and share more equitably.

These may be the hardest lessons to begin teaching, for we are only beginning to learn them ourselves as adults. It may take several generations before an understanding of our global interdependence and of the need for more cooperative international solutions to common problems is fully grasped by a majority of the world's citizens. And yet it is clear that we must start now to lay the foundations for the possibility of enduring peace.

In learning about different cultures, adolescents would not only acquire solid academic skills, but equally important, they also may begin to understand the importance of empathy—of being able to put themselves in the place of another person who has needs and interests that may be different from their own. By studying the biological interdependence of all living things, students may come to feel a deeper respect for nature and a reverence for life. These are part of a core set of ethics that I believe will become a foundation for all education in the nuclear age.

4. Universal Ethical Principles

Values are not supposed to be taught or even discussed at length in public schools because any kind of moral education might vi-

olate an individual's freedom to believe what he or she wishes. While this danger is real and not easily dismissed, there are even more serious consequences from having students grow up in a moral vacuum.

The way education is structured in some schools provides students with a powerful lesson in egocentric values. Grading systems, for example, reward individual achievement over cooperation. The intensely competitive scholastic or athletic environment in many schools reinforces students' belief that "winning is everything." Many students graduate from high schools believing that the only important goal in life is to be a success.

Some educators hope that if they teach values clarification skills and techniques in conflict resolution, students will acquire a sense of ethics on their own. This is not always the case. One can ask students to clarify their values as self-centered consumers or even as bigots, and accomplish nothing except helping them feel more comfortable with the choices they've made. Similarly, having students practice negotiation skills will be of little use if they are not explicitly encouraged to empathize with others. It is my belief that, as educators concerned about the continuation of civilization, we have no choice but to teach values in schools.

I am not advocating formal instruction in "humanism" or any particular set of religious convictions in schools. Rather, I am suggesting that students be taught the core beliefs that most of the world's religions and ethical philosophies have in common. Attempting to overcome self-centeredness, and striving for reverence for life, compassion, generosity, and moral courage are ethical principles that have been passed on from generation to generation in most civilizations, through different religious and philosophical teachings, for thousands of years. We must continue to transmit these values to future generations. Teachers need to find ways to explore with students how ethics can be more integrated into their daily lives.

Leadership for Change

There are many teachers in schools today who would feel their work had more dignity if they could think of themselves as stewards of the future: preparing young people for the world that is, as well as teaching them the skills, knowledge, and values needed to create more just, caring, and cooperative social structure.

It is clear that a strong belief in the future nourishes a commitment to academic excellence in students. An educational focus that explores both the crisis and the hopes inherent in the nuclear age will give students a sense that their school work, their skills, their knowledge, and especially their opinions are valued and absolutely essential for all our tomorrows.



Tony Wagner is Executive Director of Educators For Social Responsibility. He taught for 14 years both in public and private schools at the elementary and high school levels. It is his belief that today's schools require more courageous leadership from adults as well as curriculum development that seeks to integrate these four educational principles. Wagner invites dialogue from all interested readers. He can be reached at ESR, 23 Garden St., Cambridge, MA 02138.

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SECTION IV

SPOTLIGHTS:

RESOLUTIONS AND LETTERS

OF ADVOCACY

Panel says children need class on peace
Nuclear education
A timely and controversial lesson
Nuclear war in the classroom?

Milwaukee Planners Take A 'Measured' Approach
By Marilyn Goldstein
Reporter, Staff Correspondent
25th Avenue — Milwaukee's 1-year-old program for teaching children about nuclear war is being called "measured" by some critics.

Schools take a serious look at nuclear war
Parents must answer some tough questions
Nuclear fears: Too big a burden for our children?

WITH PEACE
7-7593



Panel says children need class on peace
A panel of experts convened by the American Academy of Arts and Sciences has concluded that children should be taught about nuclear war in the classroom. The panel, which included representatives from the military, the intelligence community, and the academic world, issued its findings in a report that was made public last week. The report states that children should be taught about nuclear war in a way that is appropriate to their age and understanding. It also recommends that parents be involved in the process of teaching their children about nuclear war.

Milwaukee Planners Take A 'Measured' Approach
Milwaukee's 1-year-old program for teaching children about nuclear war is being called "measured" by some critics. The program, which was developed by the Milwaukee Public Schools, involves teaching children about nuclear war in a way that is appropriate to their age and understanding. The program includes lessons on the dangers of nuclear war, the importance of peace, and the role of the individual in promoting peace.

Schools take a serious look at nuclear war
Parents must answer some tough questions. The report states that children should be taught about nuclear war in a way that is appropriate to their age and understanding. It also recommends that parents be involved in the process of teaching their children about nuclear war. The report also states that children should be taught about nuclear war in a way that is appropriate to their age and understanding. It also recommends that parents be involved in the process of teaching their children about nuclear war.

Nuclear fears: Too big a burden for our children?
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THE NATIONAL PTA

700 North Rush St.
Chicago, IL 60611

NUCLEAR EDUCATION

- Whereas, The health and welfare of children and youth is directly affected by their perceptions of hope for the future; and
- Whereas, There are strong indications that young people are aware of the danger and threat of nuclear developments, and may consequently be questioning what future exists for them; and
- Whereas, Young people's confusion and need for information constitute a serious call to parents and educators; now therefore be it
- Resolved, That the National PTA lend its full and active support to the identification of school nuclear education programs which will enable our young people to learn about nuclear issues so that they may deal with their concerns and respond to the realities of nuclear developments with accurate information, critical thinking, and full ethical considerations.

Resolution passed at June, 1984 National Convention.

RESOLUTION ON ISSUES
RELATED TO PEACE EDUCATION IN THE MILWAUKEE PUBLIC SCHOOLS

Whereas there is a growing concern among educators regarding their responsibility towards students and the issue of nuclear weapons development and use;

And whereas education's primary function is to prepare students for the future;

And whereas there are strong indications that children are aware of the danger of these weapons and may be questioning what future exists for them;

And whereas the morale of students and their interest in school is directly affected by their perceptions of hope for their future;

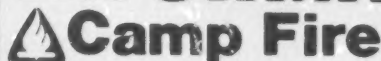
THEREFORE, be it resolved that the Milwaukee Board of School Directors declare it appropriate to introduce into the school program, activities and curricula related to peace studies and the dilemma of the nuclear arms race.

This is the original resolution approved by the Milwaukee Board of School Directors, April 19, 1983. It was first presented to the Instruction and Community Relations of the Milwaukee School Board, April 11.

Resolution Proposed for Utilization of Endowment from Rep. William Lehman, School Board Meeting of July 11, 1984

RESOLVED: THAT THE SCHOOL BOARD OF DADE COUNTY, FLORIDA, USE THE ENDOWMENT PRESENTED BY CONGRESSMAN WILLIAM LEHMAN AT THE JULY 11, 1984 SCHOOL BOARD MEETING TO FUND WORKSHOPS OR SEMINARS FOR TEACHERS AND ADMINISTRATORS IN THE AREA OF PEACE EDUCATION AND NON-VIOLENT CONFLICT RESOLUTION, AND TO PROVIDE FOR INSTRUCTIONAL MATERIALS, SPEAKERS, TRAINING, AND OTHER STRATEGIES DESIGNED TO HELP TEACHERS INCORPORATE INTO THEIR CLASSROOMS THE USE OF NEGOTIATION, ARBITRATION, CONCILIATION AND OTHER NON-VIOLENT MEANS OF PEACEFULLY RESOLVING INTERNATIONAL CONFLICTS.

INFORMATION



PEACE EDUCATION RESOLUTION

WHEREAS, Almost all persons want peace, yet all live under continuous threat of extinction; and

WHEREAS, Many children and youth harbor fears about war so that it has become a vital and often unspoken concern of youth; and

WHEREAS, The topic of war is complex and controversial requiring education and creative plans for action; and

WHEREAS, Everyone, including children, needs correct information to make responsible and sound decisions; and

WHEREAS, The primary goal of peace education shall be to reduce the threat of war; and promote a vision of a world beyond war, where conflict is resolved without violence;

NOW THEREFORE BE IT RESOLVED, That Camp Fire, Inc. supports peace education by making it a part of its programming services and advocacy; and

FURTHER RESOLVED, That Camp Fire, Inc. shall encourage councils to promote the development of study groups on peacemaking; to make use of educational resources developed by Camp Fire, Inc and other groups so that dialogues will develop in the community which will enhance the peacemaking skills of children, youth and adults in their homes, communities, nation and world.

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The Association for Education in Journalism

The Association for Education in Journalism passed a resolution urging journalism educators to consider nuclear issues in their teaching, research and public service; to cover the issue "in a way that stresses issues and values as well as facts and events" and that accords access to all viewpoints; to plan appropriate annual conference sessions on the issue in coming years.

A SUPERINTENDENT GIVES HIS REASONS
FOR TEACHING ABOUT NUCLEAR ISSUES

by Dr. Robert Sperber

Former Superintendent of the Brookline Public Schools, MA

If we want to be seen and appreciated as vital social institutions which need preserving and support, then we as teachers must play a key role in the lives of children and their families. Teaching about the issues of nuclear disarmament, helping our students develop their own framework for decision-making in the nuclear age, will not only help our students, but will enhance the schools as an important social institution.

Related to the issue of preserving the school as a significant institution is the question of helping ourselves as teachers to feel empowered at a time when society is clearly signaling that it doesn't place too high a value on teaching. Nothing can help us more in this regard than to deal effectively with an issue which affects the survival of our civilization. Teaching about the nuclear age will give us a deep sense of helping to preserve the human race.

From a personal point of view, engaging in this valuable effort, in this crusade to preserve our planet, will help us as individuals to deal with our sense of denial or our sense of anger which we feel when we read the newspapers or listen to television or radio and consider the priorities of our government.

The nation's publishers devote little attention to this subject. They are afraid that if they include material that is controversial, or which offends a group of individuals, they will not get their books accepted.

My own sense as an educator tells me that if a subject is avoided, if it is too controversial, that is all the more reason why it should be included in the experiences of learners. As educators we have a responsibility to deal with controversy, for it is out of conflict and disequilibrium that real learning takes place. We cannot allow others to take away our right to think critically about vital materials.

Educators have a responsibility to serve as adult role models for their students. As educators we have a responsibility to teach our students content about nuclear issues to help them make intelligent choices, to help them think about a critical issue and to give them a useful outlet for their thoughts and their feelings.

LETTER FROM THE SUPERINTENDENT OF THE PORTLAND, OREGON PUBLIC SCHOOLS TO
ALL PRINCIPALS AND TEACHERS IN THE PORTLAND SCHOOL SYSTEM:

One of the most compelling issues of our time is that of nuclear war and the threat it poses to mankind. A recent national study revealed that substantial numbers of seventh and eighth grade students list the threat of nuclear war as their most urgent fear. How this awesome and fear-creating topic can be dealt with in classrooms in ways which do not create emotional trauma but which, nevertheless, involve students in significant exploration of issues and alternatives is an obvious challenge for classroom teachers.

Educators for Social Responsibility, a national organization, is seeking to develop just such an approach:

How can we be realistic about the dangers, yet offer hope for the future? How can we nurture dialogue, debate, and critical thinking while encouraging teachers, parents, and students to stand up for what they think is right? What is educationally appropriate for different grade levels? The technical and political questions raised by discussion of national security, defense policy and the arms race are also complex and emotional. There are no simple solutions to either the problem of nuclear weapons or the question of what to teach students.

It is because of these questions that the Educators for Social Responsibility are engaging teachers throughout the nation in dialogue to find the answers. This memo is simply to encourage the search to answers for these questions...Clearly, this search by teachers and administrators in the Portland Public Schools must fall within the spirit and intent of the policy on academic freedom in the instructional program, which requires a balanced exploration. The School District Curriculum Department is also exploring these issues in connection with our Global Studies Program and will be reviewing any curriculum that is proposed by Educators for Social Responsibility in terms of its appropriateness for the Portland Public Schools. But there is, here, opportunity for all interested teachers to undertake this search and to share with appropriate administrators and the Curriculum Department their recommendations on the District's response in teaching about these issues.

CALIFORNIA STATE LEGISLATURE

Assembly Bill No. 3848

CHAPTER 1590

An act to add Article 6.5 (commencing with Section 51755) to Chapter 5 of Part 28 of the Education Code, relating to education.

[Approved by Governor September 29, 1964. Filed with Secretary of State September 30, 1964.]

LEGISLATIVE COUNSEL'S DIGEST

AB 3848. Vasconcellos. Education: nuclear age education curriculum.

Existing law requires certain courses of instruction, and authorizes certain other courses of instruction, to be taught in the public schools.

This bill would require the State Department of Education to collect information on current efforts of school districts to provide nuclear age education, and other information relevant to the development of a model nuclear age education curriculum and to report its findings and recommendations to the Legislature by June 30, 1965.

The people of the State of California do enact as follows:

SECTION 1. Article 6.5 (commencing with Section 51755) is added to Chapter 5 of Part 28 of the Education Code, to read:

Article 6.5. Nuclear Age Education Curriculum

51755. The Legislature finds and declares as follows:

(a) The discovery of nuclear power has profound implications for our lives and society.

(b) Current research has demonstrated that many of our children today fear the prospect of nuclear war, and it is now recognized that their frequent lack of motivation, particularly in school, is substantially influenced by further fears that there will be no future for themselves, their families, their communities, and their nation.

(c) Some polls have shown that the majority of high school students believe that nuclear war in the next decade is inevitable.

(d) If left unchecked, this lack of motivation and the feelings of helplessness could prove to be as devastating to American society as war itself.

(e) It is the inherent right of our children to pursue their educational objectives free from the immobilizing threat of nuclear war and their own annihilation.

51756. The Legislature further finds and declares as follows:

(a) Through their curricula, our public schools traditionally provide our children with an understanding and appreciation of

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personal values, and a sense of human community.

(b) It is the responsibility of our public educational system, in conjunction with parents, to intellectually and emotionally prepare our students to understand and cope with reality, including the facts of life in the nuclear age, the threat of nuclear war and annihilation, and the dangers of radiation.

(c) Our public schools provide an appropriate forum for discussion of the personal, environmental, social, political, and military aspects of life in the nuclear age. These discussions make a valuable contribution to students' development into informed, self-assured, responsible, decisionmaking adults.

(d) It is also the responsibility of our public educational system to provide students with an understanding of the causes of conflict among nations and the options for conflict resolution and the attainment of peace.

(e) Many parents, acting out of concern for their children's current and future welfare, are already seeking formal and informal assistance in providing their children with the tools for coping with life in the nuclear age.

(f) Organizations in many states, including California, are already collecting information on nuclear age education curricula designed to meet the needs of students for accurate information on international relations, nuclear war, the causes of war, and available options, including conflict resolution, in the nuclear age, as well as beneficial peacetime uses of nuclear power.

(g) The State Department of Education is best suited to the task of collecting information from various research and educational groups across the country, to make objective assessments of the value of specific components of a curriculum, and to develop a model nuclear age education curriculum.

51757. (a) The State Department of Education shall conduct a survey to review current efforts of school districts to provide nuclear age education. The survey shall include, but not be limited to, all of the following information:

(1) Students' beliefs, attitudes, and feelings regarding life in the nuclear age.

(2) The needs, if any, of students with respect to nuclear age education. Special attention shall be given to methods which students may use to creatively cope with their fears concerning nuclear war.

(3) Each school district's perception of the value of a model nuclear age education curriculum.

(4) The current efforts of each school district to develop and present a nuclear age education curriculum.

(5) Model nuclear age education programs already operating in California.

(b) The department shall also collect other information relevant to the development of a model nuclear age education curriculum,

including, but not limited to, studies, experiences, research, and reports of educational organizations, scientific groups, and psychologists regarding the effects of the nuclear age upon children.

(c) The department shall also seek information from concerned parents, teachers, students, and members of the community regarding whether and how a nuclear age education curriculum should be developed, and shall ensure that all points of view are presented.

(d) On or before June 30, 1983, the department shall submit to the Legislature its findings and recommendations with respect to all of the following:

(1) Whether the Legislature should proceed to develop a program to make nuclear age education more widely available in the public schools.

(2) If the recommendation made pursuant to paragraph (1) is positive, the best method for achieving that result.

SECTION V

CURRICULA AND CLASSROOM

MATERIALS



CURRICULA AND CLASSROOM MATERIALS

Elementary

Building Blocks for Peace. Margaret Comstock. Jane Addams Peace Association, 1213 Race St., Philadelphia, PA 19107. 18 pp.

A useful pamphlet for the younger grades. Comstock's objective is to "begin to train a generation for peace." She believes that to accomplish this, a study of the attitudes required for peace-keeping should begin at kindergarten with learning to love, empathy and skills for nonviolent conflict resolution. For each lesson the author states an objective and a theme, lists resources, suggests pertinent activities and offers a way to evaluate the lesson.

Creative Conflict Solving for Kids. For grades 4-8. Grace C. Abrams Peace Education Foundation, P.O. Box 19-1153, Miami Beach, FL 33139. \$8.00. 40 pp.

An interdisciplinary unit that actively involves students in discovering creative ways to manage conflict. Brainstorming, role-playing, problem-solving, creative writing, decision-making and the study of causes of and alternatives to conflict are included.

Dialogue: A Teaching Guide to Nuclear Issues. K-12. Shelley Berman and Boston Area ESR. 1983. 250 pp. Available from ESR. \$12.95 plus \$2.50 p/h.

A manual prepared by classroom teachers suggesting how to introduce nuclear education into schools; sample letters to faculty, Superintendents and School Boards; guidelines for age-appropriate ways to talk to young people about nuclear issues and for presenting different points of view; curriculum ideas; an adult study guide; and an annotated bibliography.

The Friendly Classroom for a Small Planet: A Handbook on Creative Approaches to Living and Problem Solving for Children. Children's Creative Response to Conflict Program, Box 271, Nyack, NY 10960. \$6.95. 1984. For grades K-6.

Specific suggestions for fostering affirmation, cooperation, communication and conflict resolution in the classroom.

Let's Talk About Peace, Let's Talk About War. A Peace Curriculum by Teaching in the Nuclear Age. BANANAS, 6501 Telegraph Ave., Oakland, OR 94609. 1983.

Divided into seven units: Expressing Thoughts and Feelings; What Makes an Enemy; Peace as a Process; History of Nonviolence; War and Nuclear Facts; Survival of the Cooperative; and Action and Empowerment. Most of the activities in this curriculum are for younger children. But

each unit also has starred activities, indicating their appropriateness for older students. For example, the authors believe that the nuclear section is unsuitable below the 4th grade and should be used with caution at any age. They state, "We do not recommend specific classroom discussion of the effects of a nuclear explosion for children K-3, unless they bring it up...We are opposed to movies or slide shows or books with frightening material for children under 12...[and] any presentation needs some introduction and preparation and, more importantly, needs both immediate and long-range follow-up." These cautions are exemplary in their care.

Perspectives: A Teaching Guide to Concepts of Peace. K-12. Shelley Berman and Boston Area ESR. Available from ESR. \$12.95 plus \$2.50 p/h.

A comprehensive 400-page guide challenging students to create active definitions of peace that include conflict and the pursuit of peace. The curriculum raises questions about the relationship between peace and justice; explores conflict resolution and the structures by which peace can be promoted and preserved; examines obstacles to peace, such as propaganda and images of the "enemy;" considers individuals and groups that have helped to create social change and work for peace; and asks students to imagine ways to begin creating a more hopeful future. Written by classroom teachers, this curriculum is filled with ideas and activities.

Taking Part-Elementary Curriculum. Part of the Participation Series. Shelley Berman and Boston Area ESR. Available from ESR. \$7.00 plus \$2.50 p/h.

Suggests classroom activities and structures that help children in elementary grades identify issues and areas for responsible, empowered efforts.

Teaching Nuclear Issues: Growing Up in a Nuclear Age: A Resource Guide for Elementary Teachers. Nuclear Information Resource Service (NIRS), 1345 Connecticut Ave., NW, 4th Floor, Washington, DC 20036. \$5.00.

A very well done resource with an annotated listing of books, articles and audio-visuals; a section on background reading for teachers; and an annotated bibliography for children — a much needed source of material that the young can read for themselves.

Middle School

Choices: A Unit on Conflict and Nuclear War. Union of Concerned Scientists, in cooperation with the National Education Association and the Massachusetts Teachers Association. Available from UCS, 26 Church St., Cambridge, MA 02238. \$10.00.

The title signals the focus and theme of this two to four week junior high school curriculum: the framework of the information

presented is the power of individuals in a democracy to make a difference. The unit emphasizes conflict resolution, relations between the superpowers, the meaning of national security, options to reduce the risk of nuclear war and a better world. Some of the topics covered are: the effects of the atomic bomb on Hiroshima, the dangers of nuclear war, the power of nuclear weapons, the effects of a nuclear explosion, the history of the arms race and proliferation. The curriculum is full of imaginative and varied materials: thoughtful questionnaires, worksheets, handouts, excerpts and charts; ideas for grouping, for journals, for homework and for creative activities; and fact sheets and teaching notes.

Crossroads: Quality of Life in a Nuclear World. 1983. Jobs With Peace Education Task Force. Jobs With Peace, 77 Summer St., Rm. 1111, Boston, MA 02110, Three books, \$4.00 each or \$10.00 for the set.

Three attractive, separate high school curricula for English, Science and Social Studies, each designed for a ten-day unit and each examining the effects of the arms race from different perspectives. Although specified for high school, the curricula seem appropriate for junior high school as well. The objectives of the curricula are to help students "to evaluate issues and information, so they can make educated decisions," and help them overcome feelings of helplessness and powerlessness. "We believe in dialogue and presenting different perspectives. Educators must provide students with as much relevant information as we can to help them formulate their own opinions. Crossroads centers on discussion, role playing, brainstorming and problem-solving, and encourages journal writing and supplementary materials to compensate for the brevity of the curricula. Such supplementation is mandated by a history of the arms race in three short pages and an article on limited nuclear war by a journalist, rather than by a proponent. Each lesson plan includes many activities, accompanying readings, worksheets and daily homework assignments.

Hiroshima. John Hersey. Bantam Books, N.Y. 1968. 116 pp. Paperback.

A classic, Hiroshima is a moving account of the destruction and carnage wrought by the atomic bombing. Hersey has woven together the stories of several people in order to show exactly what it was like in Hiroshima before, during and after the bombing.

The Participation Series. Shelley Berman and Boston ESR. Available from ESR. \$23.80 for all four curricula below plus \$2.50 p/h, or \$7.00 each plus \$2.50 p/h.

Taking Part -- Elementary Curriculum. (See Elementary)

Making History -- A Social Studies Curriculum. ESR. For grades 7-12.

Students learn to make informed decisions and to take action upon them by choosing an issue or problem that they feel needs to be addressed, researching it and implementing it. The curriculum offers an excellent opportunity for fusing the academic with the affective and for encouraging social concern.

Toxic Waste -- A Science Curriculum. For grades 7-12.

Students examine the problems of toxic waste disposal in general and then investigate these problems in their own community. A valuable feature of the unit is that it can be used as a model for a wide variety of other social issues.

Elections -- Secondary Teaching Activities. John Schultz and Hugh Taft-Morales, Washington DC/ESR.

Thirty activities focused on the American democratic election process, with an emphasis on understanding diverse viewpoints on national security. Students use media studies, political demographics, role-playing and post-election follow-up, for example, to assess candidates and issues.

Teaching About Conflict, Nuclear War and the Future. John Zola and R. Sieck. 1984. Center for Teaching International Relations, University of Denver. 200 pp. \$7.00 plus \$2.00 p/h. For grades 7-12.

Takes students from an understanding of the concept of conflict management to conceptualization of issues related to nuclear war and ultimately to an understanding of future societal alternatives.

Themes for Teaching U.S. History: Conflict and Change. David C. King and Cathryn J. Long. 1979. Global Perspectives in Education, 218 E. 18th St., New York, NY 10003. \$5.00 plus \$.75 p/h. For grades 7-12. 72pp.

Students use the themes of conflict and change as an organizing framework for studying key historical episodes in U.S. history. Covers colonial America, the American Revolution, the Civil War, the Industrial Revolution and the Age of Technology. Includes teaching suggestions and full lessons.

High School

Arms Control and National Security: An Introduction. 1984. The Arms Control Association, Washington, DC. For grades 9-adult. Paperback, approx. 40 pp.

A basic text on understanding nuclear weapons, the evolution of military technology, the nature of conflict and the history of the negotiated peace process. Illustrated with photographs, charts and graphics.

The Arms Race: Opposing Viewpoints. David Bender. Greenhaven Press, 577 Shoreview Park Drive, St. Paul, MN 55112. \$5.95.

A significant high school resource for including opposing viewpoints on arms issues. The book reprints four to six viewpoints on each of four questions; Why is there an arms race? Do nuclear weapons provide

security? Are nuclear weapons immoral? How can the arms race be stopped? Authors of these views include the US Department of Defense, the USSR Ministry of Defense, the Center for Defense Information, Richard Barnett, Phyllis Schlafly, Randall Forsberg, Alexander Haig and Leonid Brezhnev. Some teachers report that the excerpted points of view lack sufficient depth.

Decisionmaking in a Nuclear Age. Roberta Snow, Coordinator. Available from ESR, 23 Garden St., Cambridge, MA. \$12.50 plus \$2.50 p/h.

Designed for high school students, the objectives of this three to twelve week curriculum are "to promote an understanding of nuclear weapons within the context of...choices" and to help students develop the interest, social insight and decisionmaking skills to participate in the democratic process. The assumptions underlying this design are that every individual in a democratic society has the power to influence events; that to choose not to exert that influence is also a choice; and that the classroom is a place for students to develop their abilities to propagate and participate in a democracy.

To this end, this curriculum encourages controversy and debate and analyzes and challenges differing perspectives. Yalta, Truman's decision to drop the first atomic bomb, the Cold War, the Rosenberg, Hiss and Oppenheimer cases, and the Cuban Missile Crisis, to name just a few topics covered, are all presented in the context of differing viewpoints. Thus, this curriculum is ultimately about how to think, not what to think. As one student wrote in his journal, this course is about the "ways we learn to think how we think."

"A Decisionmaking Approach to Nuclear Education." Roberta Snow and Lisa Goodman. "Education and the threat of Nuclear War." Harvard Educational Review, August 1984.

Describes the senior high school curriculum Decisionmaking in a Nuclear Age.

Editorial Forum. GEM Publications, Inc., 411 Lailalieu Drive, Hudson, WI 54016. \$29.95 for classroom kit that includes 35 pamphlets and cassette.

This educational resource offers conflicting interpretations of global and national problems, reproduced from magazines, newspapers and syndicated columnists, on topics such as "Nuclear Disarmament: Debating the Issues;" "The Arms Budget and Social Priorities;" "Foreign Intervention: Defending Empire or Freedom;" "The Soviet Threat: Myth or Reality?" "Space Weapons and Nuclear War;" and "Crisis Relocation: Debating Civil Defense in the Nuclear Age." Designed to teach such critical thinking skills as recognizing editorial bias and an author's point of view, these pamphlets could be particularly useful for encouraging student reports and research.

"How to Teach Nuclear War to High School Students." Roger Molander and Ellis Woodward. Educational Leadership, vol. 40, no. 8 (May 1983).

Association for Supervision and Curriculum Development, 225 N. Washington St., Alexandria, VA 22314.

This article contends that the best framework for exploring the threat of nuclear war is to examine how a nuclear war might start and how one might be prevented.

"Nuclear Weapons: Concepts, Issues and Controversies." Betty Reardon et al. Social Education, Special Issue, vol. 47, no 7 (November/December) 1983). \$5.00. National Council for the Social Studies, 3501 Newark St., N.W., Washington, DC 20016.

Provides a rationale and conceptual framework for teaching about nuclear weapons. Contributors discuss the pros and cons of a nuclear freeze and offer a range of statements about the nuclear issue. Includes a mini-debate on the NEA's high school curriculum Choices. Classroom units are suggested, along with a bibliography and article on the use of films.

"The Schools Must Teach Nuclear Weapons Issues." Ward Wilson. Education Week, 1333 New Hampshire Ave., NW, Suite 560, Washington, DC 20036.

The author challenges objections to teaching nuclear weapons issues in the public schools, discusses some of the pitfalls, suggests topics to be covered, and describes available teaching materials.

"Security in the Nuclear Age." The Social Studies, Special Section, vol. 75, no. 3 (May/June 1984). Heldref Publications, 4000 Albemarle St., N.W., Washington, DC 20016. \$5.00.

Examines curriculum materials and conceptualizations pertaining to issues of peace and security. Reports on a study of the effects of the Arms Control Association's high school curriculum. Also presents a senior high school level teaching unit on the nuclear arms race.

Teaching Nuclear Issues: Nuclear Dangers, A Resource Guide for Secondary School Teachers. Paulette Meier and Beth McPherson. Nuclear Information Resource Service (NIRS), 1345 Connecticut Ave., N.W., 4th Floor, Washington, DC 20036. \$5.00.

An excellent guide that provides annotations of background readings for teachers, classroom materials, books for independent student reading and organizational and audio-visual resources.

Understanding Nuclear Weapons and Arms Control. Teensa Mayers. Arms Control Research, Box 1355, Arlington, VA 22210. \$2.50.

Visual presentation -- key concepts and major events in bold print in the margins -- enhances the readability of the simple, straightforward and factual text of this book. It is also well-illustrated with missile diagrams, charts on the arms race and maps, as well as listing acronyms, arms control terms, and significant U.S. and Soviet leaders and their policies.

U.S.-Soviet Relations. The Close-Up Foundation. 1983. Multi-media package. Available from Social Studies School Service or Center for Teaching International Relations, University of Denver. Student text \$6.00; curriculum guide \$3.50; video-cassettes \$95.00 each, \$175 for set of four.

A 48-page student text, teacher's curriculum guide and four video-cassettes. The text examines the two nations' differing world views, the evolution of Soviet-American relations, the arms race and prospects for peace. The teachers' guide offers lesson plans and activities to enhance the materials presented in the student text and video programs. Four accompanying video-cassettes each contain 10 minutes of background information followed by 20 minutes of questions and answers between students and experts in a forum style.

What About the Russians? Sanford Gottlieb. S.T.O.P. 1982. Available from ESR. \$5.00 plus \$2.50 p/h. 54 pgs.

A pamphlet on the Soviets that addresses the most frequently asked question in discussions on the nuclear arms race: "But what about the Russians?" Gottlieb examines the history of our relationship with the Soviets and the sources of U.S. distrust of them. With a view to discerning our common interests, he looks realistically at Soviet expansionism, Soviet fears and their over-all foreign policy goals. The readability and balanced approach of this booklet recommend it for the high school classroom.

World Military and Social Expenditures. 1983. Ruth Leger Sivard. World Priorities, Inc., Box 1003, Leesburg, VA 22075. \$4.00.

A yearly authoritative report which documents rising world-wide military costs (\$600 billion a minute, \$100 million of which goes to increase the nuclear weapons stockpile) and the precipitous decline in world social and economic indicators. Sivard's work has been cited by the New York Times and the United Nations. This report assumes that savings on military expenditures would automatically accrue to social sectors.

College/University

"Education and the Threat of Nuclear War." Harvard Educational Review. Special Issue. August 1984. \$8.00. Harvard Education Review, Longfellow Hall, 13 Appian Way, Cambridge, MA 02138.

An important collection of articles by leading writers and thinkers from different disciplines and by teachers of many age levels. Authors include Dr. John Mack, Lewis Thomas and Roberta Snow. The Editors state: "nuclear education...raises questions about the purpose of education... for example, often learning of the nuclear threat compels an active response, but the avenues for involvement are not always clear. As

teachers, we must face uncertainty, our own and our students', about how to create a path for change."

Education for Peace and Disarmament: Toward a Living World. Special issue of the Columbia Teachers College Record, Vol. 84, No. 1, Fall, 1982. Teachers College Record, Box 103, Teachers College, Columbia University, New York, NY 10027.

An outstanding collection of essays, both theoretical and pragmatic, by distinguished contributors such as: Robert Jay Lifton, Seymour Melman, Richard Barnett, Gene Sharp and Elise Boulding. These essays illustrate some of the special contributions that education can make to preventing nuclear war. Recommended background reading for adults.

FAS Syllabus Packet. Federation of American Scientists, 307 Massachusetts Ave., N.E., Washington, DC 20002. \$10.00.

A compendium of 20 selected course syllabi from colleges and universities around the country, representing a wide range of disciplines. Each syllabus contains a course outline, reading and resource list, and description of assignments.

Journal of College Science Teaching. National Science Teachers Association, 1742 Connecticut Ave., N.W., Washington, DC 20002. Vol. XII, No. 5, March/April, 1983. \$6.00.

Special issue on nuclear education. Contains detailed articles about eight college courses from around the country, brief summaries of others, and reports on the nuclear education activities of the American Association for the Advancement of Science, International Student Pugwash and other organizations. An outstanding resource, easily adapted for high school.

Nuclear Arms and National Security. National Issues Forum. Prepared for the Domestic Policy Association by the Public Agenda Foundation. 43 pp. Available from ESR. \$3.00 plus \$2.50 p/h.

An exceptional resource for college/university level and adult study groups. (Its approach, if not its complete text, may be adapted for use in high school.) The premise of this booklet is that we are obligated not to leave to "a small group of national defense experts and elected leaders [the] awesome choice" of what can be done to decrease the risk of nuclear war without jeopardizing the nation's security. Concise without being superficial or simplistic, and informative and accurate without being overly technical, the pamphlet provides a balanced discussion of this problem by presenting four approaches: arms control (stability through negotiations); peace through strength (if we want peace, we must prepare for war); freeze the arms race; and unilateral reductions. To deepen understanding of these issues and to enhance reasoning skills, the booklet discusses the assumptions underlying each of these four approaches.

Nuclear War: The Responsibility of the University. United Campuses to Prevent Nuclear War (UCAM), 1346 Connecticut Ave., NE, Washington, DC 20036.

A packet of materials that advocates nuclear education courses as an academically sound and growing area of study.

"Nuclear War: A Teaching Guide." Dick Ringler, ed. Special supplement. Bulletin of the Atomic Scientists, December 1984, vol. 40, #10. \$2.50 for journal; \$.45 for supplement.

A ground-breaking 32-page supplement that presents a wide-ranging survey of the state of education about nuclear issues in colleges and universities in the U. S. Departments represented include history, humanities, medicine, law, journalism, education, social science, biological and ecological sciences and interdisciplinary programs. The supplement concludes with a Resource Guide.

Peace and World Order Studies: A Curriculum Guide. Fourth Edition. Barbara J. Wien, ed. World Policy Institute. 777 United Nations Plaza, New York, NY 10017. \$14.95. Paperback. 740 pp.

Probably the most comprehensive guide to world order inquiry in the entire field, this superb new edition provides detailed course plans and syllabi of college courses on such topics as Global Issues, Contemporary International Issues, Peacemaking and Nonviolence, International Relations, Women and World Order, Teacher Training in World Order Education, Hunger and the Politics of Food Distribution, Ecological Balance, Human Rights and Social Justice and Militarism and the Arms Race. Included also are 36 case studies of major academic programs in the United States and a 50-page Resource section of funding sources, films, periodicals, journals, organizations and a bibliography.

The Riverside Church Disarmament Reader: A Model Course for Disarmament Studies. 2nd ed. 1981. Riverside Church Disarmament Program, 490 Riverside Drive., New York, NY 10027. \$15.00.

A wide-ranging collection of 61 articles and a course syllabus on the nuclear arms race to serve as a reader for college-level courses and adult study groups.

"The Role of the Academy in Addressing the Issues of Nuclear War." Proceedings of the Symposium. 1982. Hobart and William Smith Colleges.

Proceedings of a conference in Washington, DC on March 25-26, 1982 organized by the provost's office at Hobart and William Smith Colleges and sponsored by the American Council of Education and the Association of American Colleges. Supported by grants from the Carnegie Corporation of New York and Rockefeller Associates.

Summary of Courses on Nuclear War. UCAM (United Campuses to Prevent Nuclear War), 1346 Connecticut Ave., N.E., Washington, DC 20036. \$1.50.

Brief summaries of the contents of over 70 courses on nuclear war currently offered at colleges and universities in the U.S.

Audio-Visuals

A Place to Begin: An Approach to Nuclear Education. A videotape presentation by Roberta Snow, ESR President. Available from ESR. ESR members: rental \$25; purchase \$50; non-ESR members; rental \$35; purchase \$70. Plus 10 % p/h.

An outstanding resource for teacher education by a leader in the field. Combines actual classroom discussions with high school students and a process for helping teachers deal with critical thinking skills, students' fears and reflective writing.

Changing the Silence. Produced and distributed by the Student/Teacher Organization to Prevent Nuclear War. Directed by Maya Scott Gillingham. STOP Nuclear War, 636 Beacon St., #203, Boston, MA 02215. \$50.00 members and chapters; \$100 non-members; \$25.00 rental. 36 or 19 min. color videotape in Beta I, VHS and 3/4".

This is a moving theater piece, inspired by the nuclear fears and visions of young people, that was conceived, created and performed entirely by high school students. A packet of information is also available that describes the project and its background and offers examples of how to use it.

How Much is Enough? Decision-Making in the Nuclear Age. Andrew A. Stern. 59 min. Docuamerica Films, P.O. Box 315, Franklin Lakes, NJ 07417. Rental, \$35.00.

Part I of this film is outstanding because it ties the nuclear arms race into concrete decisions made by specific individuals, thus raising the key idea of individual responsibility in the historical development of the arms race. The premise of the film is that decisions about nuclear bombs have not been made rationally. The film begins with the history of why nuclear weapons were developed and the circumstances of the so-called "missile gap" in 1963. The basic format of the film is interviews with former participants in nuclear "events," such as McGeorge Bundy, Maxwell Taylor and Harold Brown. Excellent for high school college/university.

Nuclear War Graphics Project. 100 Nevada St., Northfield, MN 55057.

Among the various materials from the Project, the resource slide packets "Nuclear War Graphics Package" (130 slides, \$15) and "Consequences of Nuclear War Graphics Package" (180 slides, \$20) are an invaluable source of illustrative materials for teaching and lectures.

Stopping History. Adair Films, 2051 Third St., San Francisco, CA 94107. 57 min. color videotape available in any format. Rental \$45.00, Purchase

\$175.00 (sliding scale for non-profit groups), plus \$5.00 p/h.

An outstanding documentary using a demonstration at the Lawrence Livermore Laboratories to examine the ethics of personal involvement in protest about the nuclear threat. The uniqueness of this videotape and its value for the older classroom are that both those who protest and those who do not are presented with great empathy. Neither students, teachers nor other adults will be able to pass easy judgment on either "side."

There's a Nuclear War Going On Inside Me. ESR. Rental, \$35 (ESR members), \$45 (non-members). 26 min. color videotape, 3/4" and 1/2" VHS or Beta.

Adult leaders, psychiatrist Eric Chauvin and educator Roberta Snow, explore students' thoughts about nuclear war and weapons in excerpts from first, third, fifth, seventh and ninth grade classrooms. The tape has a calm, informative tone, the discussion leaders are non-directive and the discussions are open-ended. This resource is appropriate for showing to parents and educators and sparks discussion.

War Without Winners. Center for Defense Information, 303 Capitol Gallery West, 600 Maryland Ave., S.W., Washington, DC 20024. 28 min. 16 mm.

A film that juxtaposes the views of the Reagan Administration and the military with those of some American and Soviet physicians, on-the-street interviews and prominent public figures such as Eisenhower, Adm. Rickover and LaRoque and Herbert Scoville.

The former argue that the U.S. is dangerously behind the Soviets in its nuclear arsenal, that we must rebuild American military strength and power, that a nuclear war can be limited and won, and that we can be protected from radiation in the event of a nuclear attack if we "get behind a lilac bush," just like hiding from the rays of the sun.

Conversely, Rickover, father of the nuclear navy, insists that the U.S. is "overarming" and that we should "outlaw all nuclear weapons." Eisenhower warns of the subtle dangers of the military-industrial complex. Scoville, former deputy director of the CIA, asserts that the U.S. has always been ahead of the Soviets in military technology, still is, and that in one single weapons category have the Soviets demonstrated strategic superiority.

This film has proven valuable in stimulating discussion both in the high school classroom and with adults. It is particularly recommended in conjunction with the U.S. State Department film Countdown for America as an effective way to begin a unit or an entire course.

What About the Russians? Educational Film and Video Project, 1983. San Cruz, CA. 26 min. color 16 mm. film or videotape (Beta 1 or 2, or VHS) for both sale and rental. Send for brochure with price list and information on other films/videotapes, such as The Last Epidemic.

Suitable for high school students and adults, this documentary film presents the thinking of military, scientific and governmental experts on such questions as: Are the Russians ahead in the nuclear arms race? Why the concern over the MX, Cruise and Pershing II missiles? What about Soviet civil defense? How can we end the nuclear weapons race while maintaining our national security? Speakers include Robert McNamara, Randall Forsberg, George Kennan, John Marshall Lee, William E. Colby and Helen Caldicott.

What Soviet Children Are Saying About Nuclear Weapons. Intersection Associates, 56 Chestnut St., Cambridge, MA 02139. 20-min. color videotape, 3/4" U-matic, 1/2" Beta or VHS. Rental, \$35.00; purchase, \$110.

Interviews with Soviet children ages 10-15 about their thoughts and feelings concerning nuclear war and nuclear weapons, conducted by American psychiatric researchers in the summer of 1983. This tape is appropriate for showing to students ten and older, as well as to parents, PTAs, school boards and the like. One effective technique for using this tape in the classroom is to write down in advance the questions in the tape, ask students to write out their responses to them, and then have them listen to the responses of the Soviet children to the same questions.

Accompanying this tape is a teacher's guide Listening to Children: American and Soviet Voices by Lucile Bart. Available from ESR. \$5.00 plus \$2.50 p/h. This 60 p. booklet is a guide to using both this videotape and "There's a Nuclear War Going on Inside Me." The guide is filled with superb ideas for using these tapes in different ways and for different purposes both with adults and in classrooms of younger and older students.

Bibliographies

1984 ESR Bibliography of Nuclear Education Resources. Susan Alexander. Educators for Social Responsibility. \$4.00 plus \$2.50 p/h. 60 pp.

Annotated by educators for educators, with guidelines for age- and subject-appropriate use, this bibliography is for elementary age-adult. It includes materials in the following areas: resources (curricula, articles, kits, other bibliographies); books on the nuclear arms race and Soviet-American relations; and materials on the psycho-social aspects of the nuclear arms race.

1984 National Directory of Audiovisual Resources on Nuclear War and the Arms Race. John Dowling and Karen Sayer, eds. The University of Michigan Media Resources Center, 400 Fourth St., Ann Arbor, MI 48103. 50 pp. \$4.00.

The most comprehensive bibliography to date of audiovisuals on nuclear issues. In addition to descriptive annotations, materials are

rated on a scale of 0 to 10 for: overall rating; war and/or peace substantive content; antiwar content; conceptual execution; how well the film does what it intended to do; photographic, technical and artistic quality; amount of violence or upsetting material contained; and bias.

Peace Education: A Bibliography Focusing on Young Children. Rosmarie Greiner/ESR Chapter Coordinator. \$4.00.

Grouped around six components of peace education: self-awareness, awareness of others, conflict resolution, love of nature, global awareness and imagination. Each book listed has been field tested with children. Material for this age group may be difficult to find. This bibliography provides a needed service.

Peace Issues Bibliography Service. Center for International Cooperation, National College of Education, 2840 Sheridan Rd., Evanston, IL 60201. \$2.50 per subject.

A computerized, annotated listing of resources in a wide range of peace-related topics, geared to specific grade level and subject and selected primarily for elementary and secondary school teachers and parents. Topics include: Hiroshima/Nagasaki, US-USSR Relations, The Threat and Effects of Nuclear War, Defense Technology, Economics and Nonviolent Conflict Resolution.

Selected Resources for Teaching About Issues of War/Peace, National Security, Disarmament and Conflict Resolution. September, 1984. Global Perspectives in Education, Inc., 218 East 18th St., New York, NY 10003.

This organization also offers many other invaluable publications.

EDUCATORS FOR SOCIAL RESPONSIBILITY is a national, non-profit membership organization of educators, parents, and concerned individuals who believe that the nuclear age demands new approaches to education. ESR is committed to presenting divergent views in the classroom on nuclear issues, war, and peace; to dealing with young people's questions and fears about the threat of nuclear war; and to fostering citizen participation in decision making about the nuclear arms race. ESR researches students' attitudes toward nuclear issues, assesses educational materials, develops curricula, sponsors conferences and professional development programs, and provides speakers and consultation services.

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